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Crude Production Uncertainty Removed

Highest production in 1930, week ending Feb. 22, average daily output 2,699,096 bbls. Peak of U. S. production, week ending Aug. 24, 1929, average 2,975,435 bbls.

Opening of Oklahoma Fields Places Output of Nation on Stabilized Basis. More Activity Being Shown in Fields

By Andrew M. Rowley

Lowest daily average crude oil production in the United States during 1930 was for week ending Dec. 27 with average output of 2,144,074 bbls.

Reopening of the oil fields in Oklahoma, which were shut in or curtailed further on August 4 by order of the governor of the State, has removed the last factor of uncertainty in the crude oil production situation of the country. Refiners and crude oil buyers can now arrange their operations and plans with the assurance of a definite production from the various states. The maximum output for Oklahoma has been set at 546,000 barrels daily and the average for the State will be held within that figure. Governor Sterling of Texas has stated the allowable per well for East Texas will be reduced as often and as much as is necessary to hold production there within reasonable limits which he has indicated will range between 350,000 and 400,000 barrels daily with the State's allowable fixed at 902,000 barrels.

Naturally there will be a big increase in production in Oklahoma during this week. However, with this additional crude, the total output of the country still will be below the quantity estimated as necessary to meet requirements during the remainder of this year. In other words, the crude oil production situation has been stabilized and will continue so. The record production of the Oklahoma City Field during the first 24 hours after it was reopened is no indication of what the field will produce as the present allowable there is for a 10-day period and operators can produce their allowable during any period of the 10 days they wish. The average for the field during the 10 days is to be held at 181,000 barrels.

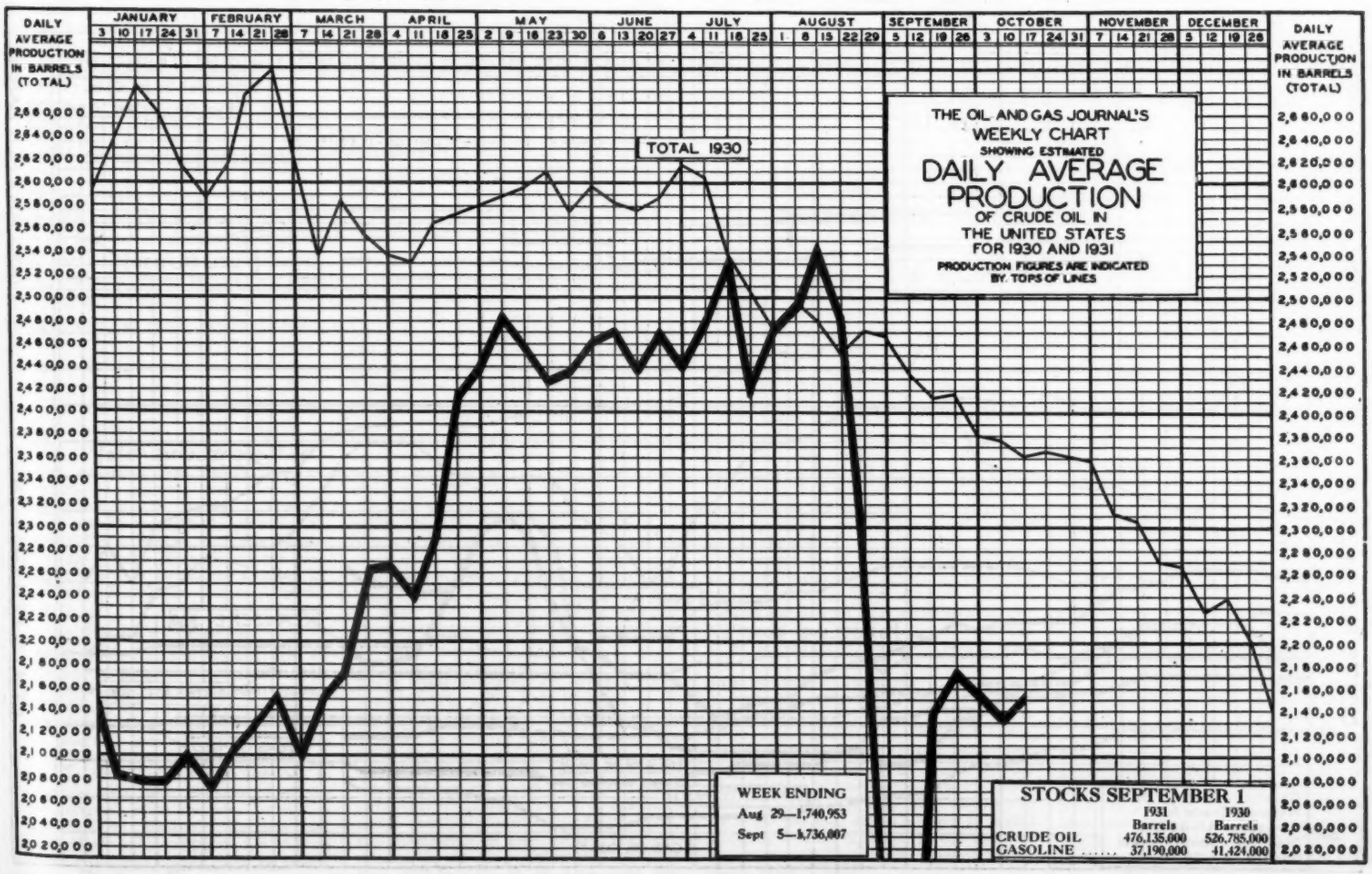
Further strengthening of the gasoline market is a favorable sign. Greater activity in field operations in the different areas bears out previous statements that a number of companies are beginning to plan for their future crude oil requirements. An effort is being made to curtail drilling in East Texas fields because the more wells completed, the less each well is permitted to produce, thereby reducing returns from such investments. This condition does not obtain in other promising sections with the result there has been an appreciable revival of drilling during the past few weeks.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of crude oil in the United States for week ended October 10 and a comparison with the previous week follows:

	Oct. 10	Oct. 3
Oklahoma—		
Oklahoma City	1,890	20,910
Seminole-St. Louis	54,415	57,105
Remainder of State	194,830	195,120
Total Oklahoma	251,135	273,135
East Texas—		
Kilgore	155,482	148,463
Lathrop	104,901	96,468
Joiner	143,501	136,465
Total East Texas	403,884	381,396
West Texas	203,793	203,805
North Central Texas	78,434	76,904
Texas Panhandle	64,536	64,187
East Central Texas	57,735	57,259
North Louisiana	28,375	29,185
Arkansas	37,490	37,625
Kansas	107,415	107,210
Total Mid-Continent area	1,232,797	1,230,706
Gulf Coast	146,244	144,837
Southwest Texas	61,046	61,215
Eastern	118,000	115,000
Rocky Mountain area	92,427	90,984
California—		
Santa Fe Springs	60,500	60,500
Long Beach	76,500	76,750
Playa Del Rey	21,250	20,500
Elwood	25,000	25,000
Kettleman Hills	60,500	59,750
Remainder of State	261,250	250,250
Total California	505,000	492,750
Total United States	2,155,514	2,135,492

→ **Increase, 20,022 Bbls. Daily** ←



Additional Advances in Refined Market

Refinery Gasolines, Furnace Oils, Gas Oils and Higher Gravity Fuel Oils in Oklahoma Higher in Price

By C. O. Willson

The strength shown in Oklahoma (Group 3) gasolines and most grades of fuel oil since the first of the month continued over the past week and spread to include gas oils and furnace oils.

Refinery gasoline prices were advanced from one-fourth to one-half cent a gallon. In fuels, the greatest strength was shown in the higher gravities but the lower gravity grades of low cold test were also strong. With very little material being offered on the spot market in Oklahoma, refiners had no difficulty in advancing their gas oils and furnace oils one-eighth cent per gallon. Observers were predicting a more rapid advance in all fuels of low cold test with the first cold period of the fall season.

Kerosene was steady with several refiners reporting more orders from their regular jobber customers and from their own station outlets. Prices covering the list of lubricating oils were steady.

The advances enumerated became effective for the most part the latter part of last week. The first of the week the market appeared to be marking time awaiting possible changes as a result of the reopening of the Oklahoma City and Seminole Fields. This development, which has been expected weekly over the past month, gives the State and the entire industry approximately 275,000 bbls. daily of additional crude oil and 60 cars (500,000 gallons) daily of natural gasoline.

Just what effect if any these additional supplies are to have on the refined market remains to be seen. In regard to crude oil it is assumed by many familiar with conditions, that it will be readily absorbed by the major buyers and a few smaller purchasers within the State. This crude, it is claimed, will simply take the place of the supplies which were taken from storage during the two months that the flush fields of the State were shut in. There is the additional fact that same purchasers may be willing to fill their depleted storage with any surplus in excess of their current refinery requirements. Should these predictions materialize, the industry has successfully consummated another hurdle looking to the stabilization of crude oil and refinery markets.

Some buyers who have not viewed the recent advances in the refined market with favor were endeavoring to obtain price concessions the first of the week assuming that the additional crude oil would end the Mid-Continent refinery curtailment of operations which has been largely responsible for the recent price improvement. Contrary to this view, it does not appear at this time the additional crude oil from the Oklahoma City and Seminole Fields will result in any material increase in crude oil runs to stills within the Mid-Continent area.

In the first place a large part of the crude oil is purchased by major companies and delivered to their plants outside the Mid-Continent. Within the latter area the bulk of the crude oil goes to a half dozen refineries owned by companies which have definitely adopted programs of refinery curtailment during the fall and winter months. The crude oil is not available to any of the smaller plants which were shut down the first of the month except those located in the Oklahoma City Field. There are a half dozen of these plants and they have not been operating with two exceptions since the field was shut down. It is not certain that all of these plants will be able to make arrangements for crude oil and if they do the crude runs to stills will not exceed 7,000 bbls. daily.

Field reports up to Tuesday showed that only one of the shut down plants had resumed operations so it will be a week or 10 days at least before the remaining plants will be able to make regular shipments. All of the refineries in the Oklahoma City Field are skimming plants and it is pointed out with the yields obtainable in this method of operation, the owners would do well to break even based on the present posted price of crude oil and prevailing open market quotations for refined products.

On the buying side several refiners continue to make small purchases of distress gasoline. This buying aided the market

(Continued on Page 103)

REFINED MARKET BAROMETER

Opposing price trends were apparent in the refinery gasoline market during the week. The Mid-Continent and Middle Western markets were generally strong and prices advanced. The costal market including the West Coast was weaker and prices lower both for export and domestic movement. The natural gasoline market continued firm despite the large increase in production assured as a result of the reopening of plants in the Oklahoma City and Seminole Fields. Kerosene market generally steady. Fuels including gas oils and furnace were stronger at interior points with no important changes in the coastal markets. Demand for lubricants slows up with Pennsylvania bright stocks lower in price. Pale and red neutral oil prices advanced in California. Wax prices unchanged.

Mid-Continent—Refinery gasoline market strong and prices higher. Natural gasolines firm. Prices higher for gas oils and furnace oils. High gravity fuels strong. Lubricants less active.

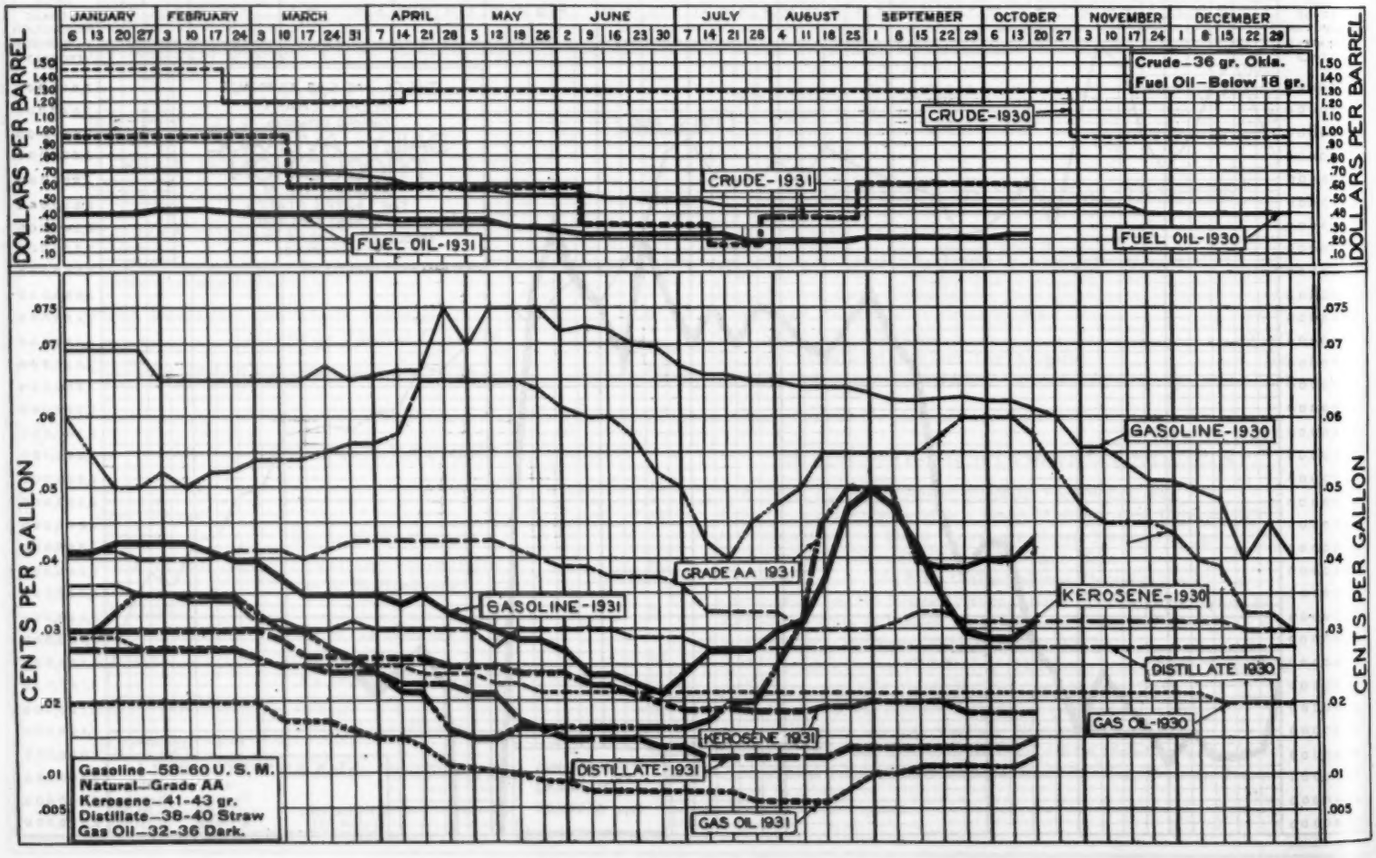
East Coast—Export gasoline prices reduced and domestic market unsettled. Kerosene firm. No change in fuel oil and Diesel oil prices. Some grades of steam refined stocks and bright stocks advanced.

Chicago—Gasoline prices advance. Fuel oil, furnace oil and gas oil also stronger. Wide interest in octane rating and other specifications of new gasolines being offered by refiners.

Gulf Coast—Strong demand for high viscosity pale and red oils. Export gasoline prices lower. Fuels slow.

Pennsylvania—Gasoline prices reduced. Kerosene and fuel oil unchanged. Bright stock prices reduced.

California—Refinery gasoline prices lower. General advances in pale and red neutral oils. No changes in other products.



Oil Fields of Oklahoma Are Reopened

Governor Lifts Shutdown Order but Retains Martial Law. Oklahoma City Output Breaks Former Records

By James McIntyre

All the oil fields in Oklahoma were opened to production on Saturday, October 10, following an order issued by Lieut. Col. Cicero I. Murray, cousin to Governor William H. Murray, which called off the enforced shut down of the Oklahoma City, Greater Seminole and a few other semiflush fields in the State.

Murray's order opened the fields for a period of 10 days, or from October 10 at 7 a. m. to October 20 at 7 a. m. The State is limited under the terms of the order to a total of 525,000 bbls. per day, which is 21,000 bbls. a day under the allotment agreed upon at the recent meeting of representatives of the public service commissions of Kansas, Oklahoma and Texas. The meeting referred to closed with the recommendation that Texas be limited to 902,000 bbls.; Oklahoma to 546,000 bbls.; Kansas to 110,000 bbls.; California to 500,000 bbls., and the other states to 323,000 bbls., thus fixing the required production of the United States at 2,381,000 bbls. a day.

For the 10 days commencing October 10, Oklahoma City will be permitted a production of 181,000 bbls. per day, the Greater Seminole area 144,566 bbls., Tatums in Carter County 5,642 bbls. and West Chandler in Lincoln County 1,396 bbls.

First Day a Record Breaker

There are 838 oil wells in the Oklahoma City Field. On the first day the field was opened, Saturday, October 10, at 7 a. m. to Sunday, October 11, at 7 a. m., 138 wells were put on production and allowed to produce 368,068 bbls., an average of 2,667 bbls. per well. This was the largest one day production the field had ever been allowed. It was 187,068 bbls. over the 181,000 bbls. which Cicero I. Murray decreed the field might average per day in the 10-day period. The reason given for permitting such a large overproduction was that permission had been given for the wells to produce all of their allotment at one time if the owners so chose, and that this was done in many instances on the first day. On the second day, the 24 hours ending Monday at 7 a. m., 98 wells were opened and only 135,674 bbls. was produced, an average of 1,384 bbls. per well. The total was 45,326 bbls. under the daily allowable. On the third day 109 wells were put on production and poured out 149,500 bbls., an average of 1,372 bbls. per well. In all, 345 wells were given all or a part of a 24-hour gauge, and produced a total of 653,242 bbls., an average of 217,747 bbls. per day and 1,893 bbls. per day per well.

There is but little change in rules and regulations for producing wells in the Oklahoma City Field, under the order reopening the field Saturday morning. Following is the verbatim order as issued late Friday by Lieut. Col. Cicero I. Murray, and is addressed to "all operators and others concerned."

"1. During the period commencing 7 a.m. on October 10, 1931, and extending to 7 a.m., October 20, 1931, all wells in the Oklahoma City Pool not then overproduced under rules and regulations of the Corporation Commission and which have served their shut-in time as provided by said rules and regulations, and which have had their potentials determined in accordance with said rules and regulations on or since April 1, 1931, are hereby permitted during said 10-day period ending at 7 a.m., October 20, 1931, to produce five (5) per cent per day of their respective potentials as last determined under and in accordance with the rules and regulations of the Corporation Commission, provided no well which was overproduced under the rules and regulations of the Corporation Commission at 7 a.m., on August 5, 1931, or which has since become overproduced under said rules and regulations, shall be put on production until a written permit has been obtained from Lieut. Col. Cicero I. Murray, commanding officer in charge.

Overproduced Wells

"2. All wells which at 7 a.m., on October 10, 1931, are overproduced under rules and regulations of the Corporation Commission, shall remain shut in until they are even, but all such wells which become even during said 10-day period ending at 7 a.m., October 20, 1931, and which have had their potentials determined in accordance with said rules and regulations on or since April 1, 1931, shall during the remainder of said 10-day period subsequent to the date on which they become even, be permitted to produce five (5) per cent of their respective potentials as last determined under and in accordance with the rules and regulations of the Corporation Commission, upon written permit being obtained from said commanding officer in charge, as provided in paragraph 1 hereof above.

"3. Wells which complete their shut-in time as required by rules and regulations of the Corporation Commission, subsequent to 7 a.m., October 10, 1931, shall have their potentials determined as hereinafter provided, and shall be permitted to produce during the remainder of said 10-day period, from the day on which said well becomes even, to 7 a.m., October 20, 1931, a total of five (5) per cent per day of their potentials as so determined, provided production obtained during the taking of potentials shall be charged against the allowable production above provided for.

Potentials

"4. Potentials shall be taken and calculated in accordance with the rules and regulations of the Corporation Commission in that regard, applicable to the Oklahoma City Pool, provided no potentials shall be taken until written permit to take the same has been obtained from Lieut. Col. Cicero I. Murray, commanding officer in charge.

"5. No new well shall be brought in during said 10-day period, until written notice has been given to the commanding officer in charge, and a permit obtained from him to bring such well in. New wells so completed during said 10-day period, shall, upon written permit to that effect being obtained from the commanding officer in charge, be permitted to take an eight (8) hour initial test flow, as now provided by rules and regulations of the Corporation Commission, provided such initial flow shall be taken continously, either in one eight-hour period, or in two four-hour periods—said periods, in either event, to be computed from the hour and minute that oil from said well first reaches the tank.

Reports to Murray

"6. Reports shall be made, as now required by rules and regulations of the Corporation Commission applicable to the Oklahoma City Field, and a copy of all reports so required shall be filed with the commanding officer in charge.

"7. For the 10-day period covered by this order, wells shall be permitted to produce only the per cent of their allowable as herein above set out, and during said period the production of underproduced oil will not be permitted. Wells will be permitted to produce only on basis of potentials taken in accordance with rules and regulations of the Corporation Commission, and no estimated potentials will be recognized."

The governor's order shutting down the flush and semiflush fields went into effect on August 4. It was anticipated by the producers themselves when the price of crude oil was reduced on July 8, on which day a schedule was put into effect that posted 29 gravity oil at 10 cents with 1 cent added for each degree up to 40 and above, which was posted at 22 cents. This represented a price of 20, 21 and 22 cents for the high grade oils produced in the Oklahoma City and Greater Seminole Fields. For the week ending July 11 an average of 631,915 bbls. per day was produced in Oklahoma. Voluntary curtailment in Oklahoma City and other pools brought the production down to an average of 520,435 bbls. the following week and a greater cut in production the following week. A 20-cent price increase on July 22 did not affect the situation any and soon afterward the governor acted. The following figures on average daily production will show how much production was kept in the ground in Oklahoma during the 68 days' shutdown period.

Week ending—	Ave. daily production (b'ls.)
July 11	631,915
July 18	520,435
July 25	481,645
August 1	424,730
August 8	420,855
August 15	263,940
August 22	269,430
August 29	265,415
September 5	256,235
September 12	255,935
September 19	257,945
September 26	263,835
October 3	273,135
October 10	250,950

What Might Have Been

During the time elapsing between July 12 and October 10 a total of approximately 29,431,000 bbls. was produced in Oklahoma. Had the State produced as much in the same period as its average for the week ending July 11 it would have thrown 57,504,000 bbls. on the market at ruinous prices, and had it yielded only its allotted production of 546,000 bbls. per day during the same period it would have totaled 49,686,000 bbls., so that the quantity of oil shut in for future

(Continued on Page 103)

Gov. Sterling Defies Federal Court Order On East Texas Wells

AUSTIN, Tex., Oct. 13.—Martial law and the Railroad Commission in the East Texas oil field were partially enjoined by federal court order tonight, to the extent of production of 25,000 bbls. of oil from five wells, until October 29, according to messages received here. Federal Judge Randolph Bryant, at Tyler, Tex., issued an order restraining the commission from interfering with operation of wells of the Brock-Lee Oil Co., operating five wells in Rusk County, and an oil refinery at Overton. The Railroad Commission, the attorney general, Gen. Jacob Wolters, the proration umpire and the Rusk County attorney were enjoined. The application was filed by E. Constantine, an operator; J. D. Rather, and the Brock-Lee Oil Co. Judge Bryant said the case would be heard in Beaumont October 29 before Judge Hutcheson and two district judges.

Sterling's Statement

Gov. Ross S. Sterling tonight said he has instructed Brig. Gen. Jacob F. Wolters, in command of martial law in the East Texas Field, to obey only his orders, and that the federal court could not enjoin martial law. Governor Sterling said that regardless of the federal court order, the wells will not be opened to 5,000 bbls., and that "they enjoined the wrong fellows" when the court order included General Wolters. He has told General Wolters by telephone not to comply with any order except those he issues, Governor Sterling said.

EAST TEXAS CUT TO 165 BARRELS PER WELL IN REVISED ORDER

By Staff Correspondent

AUSTIN, Tex., Oct. 12.—An order reducing the East Texas oil field from 185 to 165 bbls. per well daily effective October 13 was entered by the Railroad Commission Saturday. The commission announced a 10 per cent reduction for West Texas and other fields except the coastal region.

The North Texas district will also receive a 10 per cent cut the commission announced. The allowable for the Panhandle will not be determined until gas waste regulations have been agreed upon.

Fields affected by the two orders Saturday, effective October 13, were the East Texas Field whose production was reduced from 185 to 165 bbls. daily for a total of 375,000 bbls. daily; Yates Pool, West Central Texas, Salt Flat, West Texas, Penn Field, Neweastle Field, Winkler, Howard-Glasscock, Crane, Crane-Upton and Big Lake.

The text of the new order for the East Texas Field was sent out Monday. The new 165-bbl. daily well limit is to be temporary, pending determination of methods for control of gas-oil ratio. The order said:

"Conditions are such that in order to safeguard against waste and make further improvement in said field it is necessary under existing conditions to further limit the production of said field. The commission is of the opinion and so finds that withdrawals of oil from said pool should be held within safe bounds by temporary methods until by proper and complete investigation the accurate and correct method of pressure control or correct gas-oil ratios may be established for the operation of said pool so as to hold the waste of oil and gas therein to a minimum."

The order then retained the present gas-oil ratio of 500 feet of gas per barrel of oil. The period of the new order was fixed as that of the original order of September 2, or until the commission has finished investigations of the gas-oil ratio question, or until further orders may be issued.

Chairman C. V. Terrell of the Texas Railroad Commission expressed doubt in verbal statements here, whether the commission legally can take steps to curb the drilling of new wells in the East Texas Field, as advocated by G. S. Rollin, vice president of the Shell Petroleum Corp. Such restriction likely would be discriminatory, Chairman Terrell said.

Gov. Ross S. Sterling said here he believes most operators in the field recognize "the folly of sinking new wells, thus causing the allowable in wells already completed to be reduced in order to keep down the field. If they keep on drilling wells the per well allowable will be scaled down as low as 50 bbls., if the field allowable is to be kept within reason," Governor Sterling said.

Transporting Natural Gas From the Field to the Market

* * * * * *

By R. W. Hendee
Vice President, Oklahoma Natural Gas Corp.*

The primary reason for the preparation of this paper as expressed by those who asked me to attempt it was to bring last year's presentation, "Natural Gas in the United States," down to date (published in The Oil and Gas Journal, October 16, 1930). It was believed by them that the general information contained therein was of some interest and that it should be kept alive.

Due to the fact, however, that with the exception of a few regions, there had been little new development in the natural gas fields, while construction of transportation facilities for the already discovered gas was one of the bright spots in an otherwise dark industrial map, it was felt that more could be and should be written about the transportation phase of the industry. It can safely be said that since the first depressing days of late 1929, the planning, financing and construction of natural gas lines, and lines of its related products, crude oil and gasoline, has been one of the very few major industries which has not only kept up its past record but has exceeded it.

It will not be the purpose of this paper to deal with any of the extreme technicalities of the engineering, financing or construction problems of transportation such as have been so ably presented by others at previous meetings and in magazine articles. This paper will deal more with the general history of pipe and pipe lines and will discuss some of the newer and larger projects, along with recently adopted construction methods as exemplified by them.

Although great strides have been taken since the days of the first pipe lines, it is the last five years that have witnessed the construction of many large diameter long lines. Even since the construction season of 1930, pipe of the same wall thickness has been increased in ultimate tensile strength from 50,000 to 60,000 pounds per square inch to pipe used this season with a strength of 70,000 to 80,000 pounds. And that probably will not be the maximum.

Robert W. Hendee

* * * * * * * *

History of Pipe Manufacture and Joints

The use of pipes for conveying water, gas and many other products is not new. Pipe lines, like so many other things that we think are peculiar to our generation, were in use in the days of the earliest known races. The pyramids and temples built 6,000 years ago by the Egyptians reveal the fact that they used bronze tubes with diamonds inserted in the ends for drilling hard stone. In China primitive pipe lines were built by joining bamboo tubes together in some manner. Pipe lines made by boring out pine, red fir and alder trees were reported by Plunius as being used for water lines. As far back as 50 years B.C. lead and earthen pipe for water lines had come into existence in Rome.

There is also some evidence of the use of lead pipe in Babylonian days. It was made like all lead pipe up to recent days by bending sheets of lead to a pear-shaped section and soldering or joining in some manner the longitudinal joint.

About the year 1235 the City of London laid cast lead pipes and also tried out some pipes of stone and others made of "red earth, baked." In 1430, in England, a boring mill was patented for making wooden well casing and pipe for water lines.

The next development in the pipe industry appears to favor cast iron pipe, for in 1685, along with the development of the beautiful gardens and fountains of the Tuileries Gardens at Versailles, Louis XIV of France ordered the construction of pipe lines from various reservoirs to the city and to the parks. From records it appears that several of these cast iron lines were as large as 20 inches in diameter.

* * * *

Gun Barrel Helped

Another type of tube had been invented before this, however. Hollow cylinders of wrought iron or steel, probably the former, had been used in the manufacture of guns, and a great stimulus was given to the industry by the invention, in 1640, of the flint-lock gun. From that date until 1812 the manufacture of gun barrels was hand work and consisted of bending plates into cylindrical form and welding the edges together over a mandrel by hand hammering. In 1812 an Englishman by the name of Osborne perfected machinery for doing this work.

It was just three years later, or in 1815, that the industry took another step forward, for in that year the Scottish inventor, William Murdoch, introduced coal gas into London through a pipe line made from old gun barrels screwed together. The people at first were skeptical regarding this unnatural light, but later the idea met with such great popularity that the demand for gun barrels was greater than could be met. As usual, the inventors got busy and the result was the invention, in 1824, by one of two brothers, James Russell, working on the problem, of a process of buttwelding as applied to wrought iron pipe. James and his brother, inventors and pipe manufacturers, the very next year were compelled to buy the patent of one Cornelius Whitehouse whose patent for buttwelding wrought iron pipe far out-shadowed the method used by Russell. A little later, possibly in 1835, these same brothers invented a process for lapwelding wrought iron pipe.

Just about this time, probably between 1830 and 1835, the earliest use of cast iron pipe for distributing coal gas in the United States is recorded. This was in Baltimore and was soon, in 1840, followed by similar installations in New York and Philadelphia.

Butt and Lapwelding

In 1832 the first shop for making buttwelded pipe in the United States was established in Philadelphia by Morris, Tasker & Morris. This same firm four years later built the plant afterwards known as the Pascal Iron Works.

Following the patents for making butt and lapwelded pipe, inventors started work towards the development of seamless pipe. Their first experiments were in trying to duplicate, with wrought iron, the methods used in producing tubes with lead and other ductile metals. In 1836 the first favorable results were obtained by Hanson in England, but in a commercial application the method was found to be impractical. In 1840 and 1845 two other methods were developed. These first three methods involved either the cupping of a plate or the piercing of a round billet in a press to be followed by drawing or rolling the rough tube out to the length required. The latter two methods, although practical, were very costly, and it was on that account that their use was restricted for many years.

The method most generally used in making seamless tubes was an accidental discovery in the shops of the Mannesmann Brothers, in Germany, in 1885. In trying to make round bars perfect in shape and to impart a polish to them by passing them between two revolving rolls they found that there was a tendency to form a small hole surrounded by cracks through the center of the bar. Aiding this imperfection by forcing the weakened center over a sharp-nosed mandrel they developed the present process.

Only 10 years later, in 1895, the Stiefel machine, an American invention, was patented. Instead of the rolls, it uses discs to rotate the red hot rod.

Up to 1887 all butt and lapwelded pipe had been made from wrought iron. In August of that year, Thomas J. Bray, superintendent of the Riverside Pipe Mill in Wheeling, W. Va., decided and proved that they could be made just as well of soft Bessemer steel.

In this history of pipe manufacture it seems of interest to mention that, in 1862, Robert Briggs, then superintendent of the Pascal Iron Works, compiled a table giving the nominal sizes, the exact diameters and the number of threads to

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COMPRESSING ENGINES ON PANHANDLE EASTERN LINE

The Panhandle Eastern Pipe Line Co.'s Louisburg, Kans., compressor station contains five 1,000-horsepower compressing engines. The station is on the 20-inch line from the Texas Panhandle to Indianapolis, Ind.

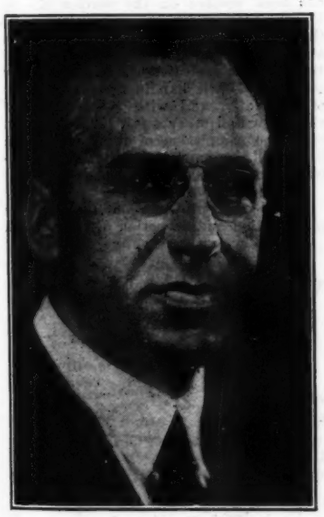
*Before Natural Gas Department, American Gas Association, Atlantic City, N. J., October 12, 1931.

T. J. Strickler Heads Natural Gas Group

Industry's Vast Development Discussed at Annual Convention. May Meet Next in Tulsa or Oklahoma City

By A. E. Mockler
New York Bureau, The Oil and Gas Journal

ATLANTIC CITY, N. J., Oct. 13.—Maj. T. J. Strickler, vice president of the Kansas City Gas Co. of Kansas City, Mo., was elected chairman of the Natural Gas Department of the American Gas Association at the annual meeting which opened here yesterday, succeeding H. C. Cooper of Pittsburgh, Pa. L. K. Langdon, general counsel for the Union Gas & Electric Co. of Cincinnati was elected vice chairman. The managing committee for the coming year, consisting of six members, was elected as follows: William Moeller, Jr., vice president of the Southern California Gas Co., Los Angeles; J. B. Tonkin, vice president, Peoples Natural Gas Co., Pittsburgh; M. W. Walsh, superintendent of distribution and construction, Louisville Gas & Electric Co., Louisville, Ky.; George E. Walker, president, United Natural Gas Co., Oil City, Pa.; H. L. Montgomery, general manager, Cities Service Gas Co., Bartlesville, Okla.; and Frank H. Brooks, president, Missouri Valley Pipe Line Co., of Omaha, Neb.



Maj. T. J. Strickler

Gallagher Heads Association

R. W. Gallagher, president of the East Ohio Gas Co., Cleveland, was elected president of the American Gas Association at the annual election here today. Other officers elected were as follows: Arthur Hewitt, Consumers Gas Co. of Toronto; N. C. McGowen, vice president, United Gas Public Service Co., Houston, and Howard Bruce, chairman of the board, Bartlett Hayward Co., Baltimore, vice presidents. William J. Welsh of the New York and Richmond Gas Co. of Staten Island, New York, was elected treasurer. New directors were elected as follows: F. S. Wade, president, Southern Counties Gas Co., of Los Angeles; B. J. Mullaney, vice president, the Peoples Gas Light & Coke Co., Chicago; H. C. Abell, vice president, Electric Bond & Share Co., New York; P. S. Young, vice president, Public Service Electric & Gas Co., Newark, N. J.; H. Russell, president, Rochester Gas & Electric Corp., of Rochester, N. Y.; C. N. Lauer, president, Philadelphia Gas Works Co.; F. C. Freaman, president, Providence Gas Co.; F. A. Miller, chairman of board, S. R. Dresser Manufacturing Co., Bradford, Pa.; J. S. DeHart, Jr., president, Isbell-Porter Co., Newark, N. J.

Thomas R. Weymouth, vice president of the Columbia Gas & Electric Co., in presenting a summary of the work of the main technical and research committee reported satisfactory progress in the outstanding problems studied by that group during the past year. The gas measuring subcommittee of the main technical and research committee is preparing tables of orifice meter coefficients he said and the committee is working with contemporary committees from the American Society of Mechanical Engineers and the Natural Gasoline Manufacturers Association on matters of joint interest.

Consider Geophysical Methods

Considerable of the natural gas men's session was given over to a discussion of geophysical and other methods of exploration. Interesting talks on the subjects, illustrated with slides and charts, were presented by Dr. J. H. Swartz, geophysicist of the U. S. Bureau of Mines; Dr. Frederick W. Lee, supervising engineer of the geophysical section of the Bureau of Mines; and Dr. C. E. Van Orstrand, of the geological survey of the United States Department of the Interior. Doctor Lee's talk went into some detail on the gravitational, magnetic, electrical, seismic, geothermal, radioactivity, and self-potential methods of applied geophysics.

Robert W. Hendee, vice president of the Oklahoma Natural Gas Corp., Tulsa, delivered an interesting talk on transportation of natural gas from the fields to the markets. Mr. Hendee's paper dealt with the history of pipe line construction from its earliest days down to the present.

An interesting thought was imparted in the closing paragraph of Mr. Hendee's address in which he said, "A careful scrutiny of the map of the United States will show clearly that practically all of the recent pipe lines pass directly through or adjacent to the largest coal areas in the country. How simple it would be, when natural gas is gone, if it ever does go, to make coal gas right at the mouth of the mines and transport it to the markets in the existing lines."

Next Meeting Place

Up to the time of writing there has not yet been any decision as to the location of the next annual meeting of the natural gas men, although it is understood that the choice which will finally be made lies between Tulsa and Oklahoma City.

The attendance at this year's natural gas session has been considerably smaller than last year, only about 250 being present at today's session as compared with a turnout of close to 600 last year.

Clifford E. Paige, president of the association, devoted considerable attention to natural gas in his annual address which featured the first general session of the convention today. "The rapid expansion of the natural gas industry," he said, "will have a far reaching influence and will continue to contribute much in the way of interest and stimulus to our entire industry. In the space of a few years due to newly discovered natural gas reserves containing enormous quantities of thermal energy, this industry has risen to a position of prime importance in the economic and business picture of the entire country. In its expansion many new markets were obtained in cities formerly served with manufactured gas and in the past five years this replacement has occurred in nearly 100 cities ranging in population from 5,000 to 600,000 and affecting over 1,400,000 gas customers.

"Today extensions to new territories are going ahead at a more rapid pace than ever before. The growth of the natural gas business, with its possibilities and problems, has been well recognized by our association in directing a large portion of its activities to subjects of paramount value to the natural gas industry and through the natural gas department, much has been done in the important measure of conservation and in other technical and research maters.

Ralph W. Gallagher

"We are putting to practical use the studies made under the direction of this association in the problems incident to the successful changing over in fuel supply from one kind of gas to another kind, in the utilization characteristics of new gases and mixtures, in the modification of plant operation to meet different kinds of supply, in construction of mechanical pipe joints, in improved methods of pipe making to meet the stresses of increased operating pressures and in the corrosive characteristics of various soils throughout the country, so as to give reliable information on suitable pipe coverings. The need for advanced research in these fields becomes more apparent as high pressure transmission lines bearing natural gas are extended over continually increasing distances in many sections of the country."

President Paige characterized the use

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TERMS EXPIRE THIS YEAR FOR MORE THAN HALF OF A.P.I. DIRECTORATE

A total of 118 offices are to be filled by election or appointment at the twelfth annual meeting of the American Petroleum Institute in the Stevens Hotel, Chicago, November 10, 11 and 12 next. Thirty-one directors and 60 members of divisional general committees are to be elected by members of the Institute, eight Institute officers and four directors are to be elected by the board of directors and 15 members of divisional general committees are to be appointed by the new president.

Candidates for the board of directors will be nominated by the board of councillors at a meeting Tuesday morning, November 10, and the election will be held Tuesday afternoon. Officers of the Institute are chosen by the board of directors during the annual meeting. The present incumbents are:

President, E. B. Reeser, Barnsdall Corp., Tulsa; vice president at large, L. P. St. Clair, Union Oil Co. of California, Los Angeles, Calif.; vice president for production, Robert R. Penn, Penn Oil Co., Dallas, Tex.; vice president for refining, vacant; vice president for marketing, Edward G. Seubert, Standard Oil Co. of Indiana, Chicago; executive vice president, W. R. Boyd, Jr., American Petroleum Institute, New York; treasurer, Amos L. Beaty, New York; and secretary and assistant treasurer, Lacey Walker, American Petroleum Institute, New York.

The vice presidents are ex-officio chairmen of the general committees of the respective divisions of production, refining and marketing, with the executive vice president ex-officio vice chairman.

The 67 members of the board of directors, 35 of whose terms expire this year, represent various branches of the industry, as follows: Production, 12 members; manufacture, 10; distribution, 7; transportation, 3; foreign trade, 3; supply, 1; natural gas, 1; natural (casinghead) gasoline, 1; and a group-at-large of 29.

The 31 directors whose successors are to be nominated by the board of councillors, which is tantamount to election, are:

Production Group

Pacific Coast, W. C. McDuffie, Pacific Western Oil Co., Los Angeles, Calif. Rocky Mountain, B. B. Brooks, Consolidated Royalty Oil Co., Casper, Wyo. Central United States, H. V. Foster, Foster Petroleum Corp., Bartlesville, Okla.; W. C. Franklin, Tulsa; J. Edgar Pew, Sun Oil Co., Philadelphia, Pa.; and Frank Phillips, Phillips Petroleum Co., Bartlesville, Okla. Eastern United States, O. D. Donnell, Ohio Oil Co., Findlay, Ohio.

Manufacturing Group

Pacific Coast, one nomination to fill vacancy caused by death of E. W. Clark, Union Oil Co. of California, Los Angeles, Calif. Rocky Mountain, T. A. Dines, Midwest Refining Co., Denver, Colo. Central United States, John L. Gray, Deep Rock Oil Corp., Tulsa, and P. M. Miskell, Empire Refineries, Inc., Tulsa. Eastern United States, Charles L. Suhr, Pennzoil Co., Oil City, Pa.

Distribution Group

Rocky Mountain, E. T. Wilson, Denver, Colo. Central United States, Edward G.Seubert, Standard Oil Co. of Indiana, Chicago. Eastern United States, W. T. Holliday, Standard Oil Co., of Ohio, Cleveland, Ohio.

Transportation Group

Tank cars, Lauren J. Drake, Union Tank Car Co., Chicago.

Natural Gas Group

Henry C. Morris, Dallas Gas Co., Dallas, Tex.

Natural Gasoline (Casinghead) Group

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Chicago Line a Big Engineering Feat

More Than 900 Miles of 24-Inch Line Laid in Less Than One Year, Including Crossings of 18 Rivers. Contemplate Second Line

August 5, 1931, saw the completion of the last link in the huge Texas-Chicago natural gas pipe line. The use of the word "huge" is unqualified in this case since it is very doubtful that any natural gas project, possessing the tremendous proportions such as this line does, ever offered such a challenge to the organization and engineering ability of the natural gas industry as was made by the Chicago line. Begun and completed during one of the country's worst financial crises, this project represents no small testimonial to the financial ability of its sponsors. The construction of some 900 miles of 24-inch gas line crossing five states, not to mention 18 rivers, including the Mississippi and Missouri, all completed in a record time of less than 12 months, will long stand as a record of achievement in engineering and construction.

The story of the building of this line if completely told would occupy many volumes. Only a few of the more important phases of the construction of this great line are treated in the following pages.

Design and Construction

During the summer of 1930, the Continental Construction Corp. was formed and organized to undertake the design and construction of the Texas-Chicago gas line. The responsibility for organizing and directing the activities of this company was entrusted to Henry L. Doherty & Co. of New York City by the project participants who are The Texas Company, the Standard Oil Co. of New Jersey, the Cities Service Co., the Insull interests, the Columbian Carbon Co. and the Southwestern Development Co.

The first joint of pipe was laid August 22, 1930, and the last joint, which formed the completing link in the line, was laid on August 5, 1931. During this time 10 compressor stations were also built containing a total of fifty-seven 1,250-horsepower direct connected gas engine compressors comprising 71,250 horsepower. Near the field compressor station at Fritch, Tex., a gasoline plant was built to treat the gas before it starts on its long journey to Chicago.

The accompanying map shows the route of the main line terminating at Joliet, Ill., as well as the location of the 10 main line compressor stations placed at approximately 95-mile intervals along the line. Delivery into the Chicago area is accomplished by two 24-inch lines built and owned by the Chicago District Pipeline Co. These two lines originate at Joliet and connect with the Peoples Gas Light & Coke Co.'s gas distribution system at several different points.

Routing

The routing of the line was accomplished by aerial photography, mosaic maps being made of the territory traversed. The route selected was controlled primarily by such factors as topography, soil conditions, river crossings, timber lands and other physical features influencing ultimate construction costs. The aerial survey method proved of inestimable value in eliminating construction difficulties and aiding in the selection of suitable river crossings. It was a large factor in hastening the early completion of the project.

Important rivers crossed are the Canadian, North Canadian, Cimarron, Arkansas, Solomon, Little Blue, Big Blue, Missouri, Nishnabotna, Grand, Clanton, Des Moines, Skunk, Iowa, Cedar, Mississippi and Fox.

Rights of Way

A large force of right of way men were employed in securing rights of way and in the purchase of compressor station sites. In no case was construction held up for right of way, notwithstanding the fact that many difficulties were encountered in this work. In some instances recalcitrant landowners necessitated changing the location of the line, which was speedily accomplished.

Material

It is doubtful that any company ever attempted to exercise such technical skill and care in the selection, testing and inspection of materials used in the construction of a natural gas pipe line. A staff of approximately 25 skilled engineers were constantly employed in testing and inspecting pipe, compressors, engines, valves, couplings, fabricated headers and special equipment purchased. Virtually every piece of material utilized was rigidly tested at the mills or factories to pressures from 900 pounds to 1,800 pounds per square inch. Frequent test specimens selected at random were tested to destruction, to determine the ultimate strength and factors of safety that might reasonably be expected from the "mill run" of products supplied.

The same rigid inspection and testing of materials were also employed in the field to insure proper assembly. Daily samples were cut from the field welds and coupons pulled. Every precaution was used to obtain uniform quality of workmanship and material.

Pipe

The main line was constructed of 24-inch National seamless and A. O. Smith electric welded pipe. It was necessary to employ the mill facilities of both corporations to meet the daily requirements. The United States Steel Corp. constructed three expanding mills for producing 24-inch seamless pipe, and their plants were fully taxed to make shipments at the rate specified. A large amount of the pipe was "double-jointed" by factory welding. Such pipe was delivered on the job in 60 to 80-foot lengths, weighing from three to five tons each.

Construction

All of the main line was laid with a minimum coverage of 36 inches of earth. Field bending of the pipe to make it conform to the irregularities of the surface topography was reduced to a minimum by a large amount of grading and excavating on the right-of-way.

The pipe was joined by a combination of welds and couplings, Dresser couplings being used at intervals of 80 to 120 feet. Both the electric and oxy-acetylene processes were employed.

All pipe was thoroughly protected against corrosion. A prime coat was applied at the pipe mills. This was followed in the field by a second prime coat and a coat of hot pipe line enamel. Where certain sections of the right of way were known to be corrosive or prone to cause high soil stress a wrapper of felt was applied to the regular coatings.

River Crossings

Where available, government records extending over a period of 50 years were studied, in searching for suitable river crossings. High water, shifting channels, flood areas and other influencing factors were carefully analyzed.

River approaches were constructed of parallel 18-inch lines, manifolded with a valved header into the 24-inch main line. The stream channels were crossed with six 12-inch or ten 10-inch multiple lines, depending upon channel conditions. These lines were dredged below stream bed, thoroughly anchored and manifolded with valved headers into the 18-inch approach line. The greatest care and skill was exercised to insure safety and permanency of the river crossing installations.

Compressor Stations

The main line is equipped with ten compressor stations, spaced approximately 95 miles apart. The first station, located at Fritch on the Rock Island Railroad, in southwestern Hutchinson County, Texas, is equipped with twelve 1,250-horsepower gas engine driven compressors. This is known as the gathering field station; and is the initial booster station on the main line. This is the largest natural gas compressor station ever constructed. The remaining nine stations are equipped with five 1,250-horsepower units. Each station is fully equipped with its own electric generators, water wells, and circulating water pumps. Modern cottages are provided for the operating personnel.

Telephone System

As an operating aid and to insure continuity of service, a four-wire telephone system was constructed from Chicago to Amarillo. The wires are strung on company-owned poles, located on private rights of way, for a distance of approximately 700 miles. Leased pin space was procured for the remaining distance.

Facilities as installed provide for two physical and one phantom talking circuits. This makes it possible for intercommunication between all field points and compressor stations, and provides long distance trunks for direct communication between Chicago and Amarillo. The facilities are so arranged that pressure dispatchers can control the movement of gas, operation of wells, and maintain hourly service with each of the compressor stations direct from the Chicago office.

Such a system is deemed absolutely essential to the successful operation of a natural gas pipe line system, where the principal markets are located 1,000 miles from the gas fields.

Gasoline Plant

A dry gas gasoline absorption plant has been erected on the station site at Fritch, Station No. 1. This plant is of the latest improved type, equipped with absorbers, stabilizers, fractionators and refrigeration facilities. The plant as now constructed will handle 200,000,000 feet of gas daily, and with the addition of absorbers and other auxiliary equipment, upon the completion of the second main line, will be capable of handling 400,000,000 feet daily.

Capacity

While the project contemplates the construction and operation of two 24-inch

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Map of route of Continental Construction Co.'s natural gas pipe line from Texas Panhandle to Chicago and Milwaukee.

New Oil Field at San Miguelito, Calif.

Area Between Ventura Avenue and Rincon Opened by Continental and Chanslor-Canfield Midway Companies Is Closely Held

By L. P. Stockman

LOS ANGELES, Calif., Oct. 10.—The Continental Oil Co., discoverer of the Seal Beach Field of Los Angeles Basin and owner of substantial acreage in the prolific Kettleman Hills Field, has increased its prestige by proving up the probable existence of a new oil field at San Miguelito on the major Ventura anticline about midway between the Rincon and Ventura Avenue Fields. No. 1 Grubb, the potential discovery well, is not yet on actual production but its productivity should be determined in the near future. The outlook is especially encouraging and substantial production is expected if a satisfactory water shutoff has been effected.

No. 1 Grubb focused the attention of operators on the possibility of this area several days ago when it blew in unexpectedly during a water shutoff test on the 9⅝-inch landed at 6,472 feet. The bit had only gone a few feet below the shoe when the well suddenly came to life and started flowing at the rate of 1,000 bbls. per day. Casing pressure during the short flow rose to 970 pounds but the presence of water in the initial production prevented a conclusive test and the well was accordingly killed to complete the water shutoff test. The Continental and Chanslor-Canfield Midway Oil Co. hold practically all of the potentially productive acreage in this area, the former's 1,100 acres being on the apex of the structure.

Chanslor-Canfield Midway Oil Co. was the first to drill in the San Miguelito area, but failed to develop commercial production despite the fact that this wildcat, No. 2-A Hobson, was carried down to the unprecedented depth of 10,030 feet. This well, which holds the world's record for deep drilling, has subsequently been plugged back to 7,825 feet and is making 170 bbls. per day on a compressor. Several other wildcats have been drilled in the immediate vicinity of the San Miguelito area but all were off structure and failed to secure production. The topography of this area is very irregular and the badly broken up condition of surface formation precludes conclusive geology. There appears to be a very definite closure between the San Miguelito area and the Ventura Avenue Field, approximately 4 miles to the east, thus indicating the existence of a separate and distinct structure.

Geological Features

The geographical and geological location of the San Miguelito Field is of special interest because it is located at a strategic interval along the Ventura anticline and fills the gap between the Ventura Avenue and Rincon Fields. The Ventura anticline is 16 miles long and has a general east-west trend. From the Ventura Avenue Field this perfectly closed major anticline can be traced 8 miles east to a point where it plunges into the Santa Clara Valley and 8 miles west to Rincon where it plunges beneath the Pacific Ocean. The Ventura Avenue Field, in the center of the Ventura anticline, is likewise situated on the highest part structurally. The San Miguelito area is 4 miles west of the Ventura Avenue Field with Rincon 4 miles west of San Miguelito and 8 miles west of Ventura Avenue.

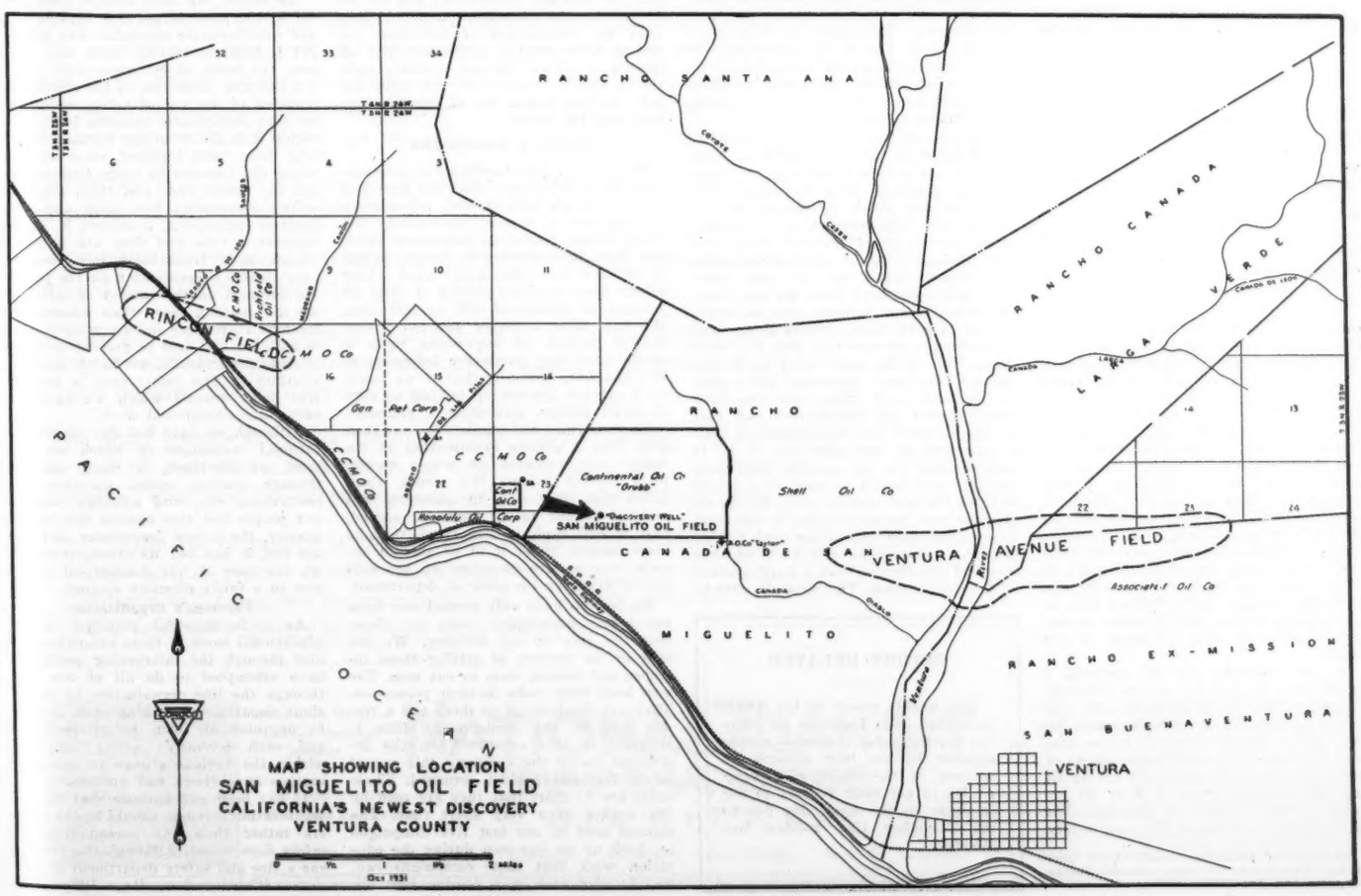
There is not yet sufficient data available to indicate the productivity of the San Miguelito structure but one would not be far wrong in venturing the opinion that it should be substantially better than Rincon but greatly inferior to Ventura Avenue. As a matter of fact, Ventura Avenue is one of the most productive fields in the state and has enormous drainage area and thickness of oil sands. The Ventura Basin contains the thickest oil formations in California and has 20,000 feet or more of Fernando (upper Miocene, Pliocene and lower Pleistocene) reservoir rocks. This is underlaid by approximately 8,000 feet of Modelo and Vaqueros (Miocene) and Sespe (Oligocene?) generative and reservoir rocks. The Modelo, Vaqueros and Sespe are also productive as well as generative in the Ventura Basin.

Formations Similar

Geological formations at Rincon, Ventura Avenue and in the San Miguelito area are quite similar. Present production is obtained in the Pico formation (lower Pliocene) and since the underlying Vaqueros formation (Miocene) is unusually productive in the coastal region at Elwood, it should also be productive along the Ventura anticline if reached. No wells within the confines of the Ventura Avenue Field have yet been drilled entirely through the Pliocene. Seven productive zones in the Pico (lower Pliocene) have been found in the Ventura Avenue Field up to the present time. The latest sand found was the 57 zone, discovered in the Associated Oil Co.'s No. 57 Lloyd, which came in flowing 4,850 bbls. of 31.6 gravity oil per day from 8,823 feet. The bit was still in the pay when drilling was concluded after passing through over 500 feet of penetration in the new zone. This well is stratigraphically 800 feet deeper than any other well drilled in the Ventura Avenue Field and has penetrated 4,878 feet below the base of the Gosnell shale, which represents the enormous thickness of oil zone now penetrated in this field. No. 57 Lloyd, in addition to its importance from an exploration standpoint, is the deepest commercial producer in the world at the present time.

The Rincon Field, located at the extreme western end of the major Ventura anticline where it plunges beneath the Pacific Ocean, is partly inside the shore line and partly beyond the high tide line. The apex of this structure is out in the open ocean where production has been developed on state tideland drilling permits by the use of heavily reinforced drilling piers of permanent construction. The structural feature dominating the coast line at Rincon is a relatively narrow, slightly asymmetrical anticline plunging to the southeast at any angle of about 10 degrees and then gradually rising with a broadening axis to San Miguelito and Ventura Avenue to the east. The subsurface axes in the Rincon and Ventura Avenue Fields are south of the surface axes and a similar condition probably prevails in the San Miguelito area. At Rincon the axis of the structure, compressed to a sharp peak at the surface, inclines at an angle of about 8 degrees to the south with depth, broadening and flattening out appreciably. The south limb flattens from 75 degrees dip

(Continued on Page 83)



Use of Safety Codes in Refineries

Atlantic Refining Co. Has Perfected 20 Codes of Various Phases of Plant Construction and Operation

By Walter B. Murphy
Atlantic Refining Co.*

We have hardly gone far enough in the introduction of safety codes in our refinery to warrant our telling you about this work in any authoritative way. It is only for the purpose of discussion and to bring out what other refineries have done that we think this paper can be of value in discussing the use of safety codes in a refinery.

At the present time in our refinery we have 20 codes in use in the following divisions of our work: Boiler shop, boilermakers—field, blacksmiths, bricklayers, carpenters, case and can department, crane operators, electricians, laborers, laboratory workers, leadburners, loading racks—loading tank cars, machinists, painters and pipe coverers, painters and spraying, pipe fitters, pipe shop, riggers and rigging equipment, steam boiler houses, and welders.

We contemplate adding the following to this list: Acid department, asphalt manufacture, batch still operation, candle works, cleaning department, cooperage department, cracking code, drainage department, drum shop, filter house operation, firemen, gas department, lubricating oil treating, naphtha treating, paraffin wax manufacture, pipe still operation, pumping and stores department.

About a year and a half ago we made an attempt to revise our employes' handbook which contained information regarding hours and working conditions, also some few safety rules and regulations. We planned to make the safety section much more comprehensive than it had been and to cover all departments. After we had collected all the ideas to go into this type of handbook, it was found that the safety section was entirely too voluminous for any one man to read thoroughly. Only a small portion of the data and information in this rule book applied to any one man in our refinery. We therefore came to the conclusion that our employes' handbook should not contain any safety instructions or rules except those of a general character which would apply to our whole organization. It was decided to divide the safety section of the handbook so that a small leaflet could be issued to every man in the organization containing what he should know about safety.

Safety Education

At the time that we decided to make this change in our method of publishing safety rules, we inaugurated a new idea with regard to safety education. Our general safety committee was organized and made up of only six members. This committee started out with two definite ideas. First—in the list of contestants in the National Safety Council Petroleum Section Contest we were entirely too far removed from the top company. If our method of reporting lost-time accidents was the same as other companies we should certainly improve our accident record. Second—after going over our 1929 accident record we found that 85 per cent of our accidents in that year were due to unsafe conduct of the injured man or some fellow worker and not due to any defect in the physical equipment of our plants.

In our refineries, for the previous 8 or 10 years, we had had a very thorough inspection of all departments by our safety department. Our permit system for the use of fire in gaseous places was very complete and every other phase of inspection work. We were still having an accident frequency rate of 8 or 10 for every 1,000,000 hours of exposure. We came to the conclusion that our safety department could do little or nothing toward reducing the number of unsafe conduct accidents by changing the type of equipment or any physical parts of the works. We decided we would educate every single one of our men for safe conduct in an entirely different manner from what we had done in the past. We therefore introduced the Foreman's Safety News Letter for educating the foremen, and a quarterly educational campaign going on for one week in which we would reach the individual workers in a number of different ways.

We proceeded to analyze the best method of teaching safety to 3,500 or 4,000 men in our principal refinery at Philadelphia, planning later to extend this work to our other refineries. We, of course, have been carrying on a considerable amount of educational work over the previous 8 or 10 years in all sorts of different ways, just as most other large businesses have done. We soon came to the conclusion, however, that we wanted our men to know certain things and we wanted to be sure that they did know them. The "being sure" part is, in our opinion, the most important part; that is, to know that every man has been reached with the information and that he has absorbed this information in such a way that he can make use of it. It was decided to use exactly the same methods that would be used in a school to teach the same sort of facts. We would give our men the information in one form or another, then give them oral and/or written examinations to find out whether they had absorbed at least a small amount of this information. The methods already used for giving out information consisted of posters, signs, safety magazines such as the Atlantic S. O. S. and the Foreman's Safety News Letter, contests which we have been carrying on among our various departments, campaigns of one kind or another, exhibitions and all of the other educational work which goes with the elimination of accidents, together with the one additional idea of issuing to all of our men a safety code which should contain all the rules for safe conduct and a list of hazards surrounding the work.

Method of Examination

We decided that handing out information and making sure that our men had a firm enough hold on this information to make use of it were two entirely different things. Numerous campaigns which had been held previously in the month of October for educational work along safety lines consisted chiefly of talks or lectures to groups of 400 or 500 men. We knew that lecturing was not a successful method of impressing upon a man's mind any particular information. We had felt, however, that if we could do a certain amount of talking to men in small groups, give them a pamphlet containing rules and regulations, and then give them a written examination on the subject as presented we would accomplish several things. We would, first, know that the man in question was reached by our safety message; second, that it had sunk in and third, that he knew enough about it to be able to answer four or five questions on the subject of safety in his trade or department.

So far we have only turned out from our safety department codes for about half the men in our refinery. We are still in the process of getting these together and issuing them to our men. The men keep these codes in their possession. They are checked out to them and a record card in the employment office is stamped to this effect. When the individual leaves the company this record is checked and booklet returned. These codes are so short that they are read by the worker in a very short time. The method used in our last five campaigns to check up on our men during the education week that these campaigns ran, was to give each man coming into the gate a questionnaire which required his answering three or four general questions. The worker is then required to sign his name, check number and department and turn the slip over to the foreman. The foreman checks the answers as to correctness and slips are then forwarded to the superintendent who checks up to see that all men have turned in the questionnaires. They are then sent on to the safety department where they are checked to see if all the men working on particular days have turned in questionnaires. Every man is supposed to answer this questionnaire in his own handwriting. In some cases where the worker cannot write the foreman has to assist him.

During these quarterly campaigns every foreman has a meeting with his men for a period of from 15 minutes to half an hour in groups of not over 20. At these meetings we distinctly instruct the foremen that they are not to lecture or preach to their men but to ask the men definite questions about accident hazards, safe conduct, etc. The bases for these questions are taken from the safety codes for the various trades.

It does not seem to us it is essential that these codes be absolutely thorough and comprehensive. We are using them as an excuse for a contact on the safety question between the supervisor, foreman or pusher as the case may be and his individual men. We feel that the safety code is a text book for the safety class just as any school textbook would be for a schoolroom.

As stated, we have always been fearful in the past, before this type of code and questionnaire campaign was inaugurated, that our safety work was going over the heads of our men—that it was not reaching them. One of the educational features of the use of safety codes that we find particularly valuable is the education it is giving to our foremen in getting these codes together, since we have asked the foremen in every case to submit the safety code and then, after the safety department has made any additions or corrections, to correct it. To get together a code and then ask questions regarding it from their men, requires considerable concentration on the part of our foremen on the subject of safety. If we did nothing more than educate our foremen thoroughly in this manner, what to look for and how to prevent accidents in their departments, we feel it would be worthwhile. The safety code is the central point around which we expect to swing our educational work.

Although we have had five or six educational campaigns in which we have tried, as described, to reach our men through posters, codes, questionnaires, recitations, etc., and although some of our people feel this method has lost its novelty, the safety department still does not feel it has lost its effectiveness and we are sure it has reached all of our men in a fairly effective manner.

Foremen's Organization

As a fundamental principle in our educational work in these campaigns and also through the intervening period, we have attempted to do all of our work through the line organization in the various departments, asking each foreman to organize his own safety committee and each foreman's safety committee within the various groups to consist of various supervisors and pushers.

It has been our purpose that the line organization foremen should be the teachers rather than any person from the safety department. Although this refinery has a fire and safety department of some

(Continued on Page 100)

*Director of plant personnel. Paper presented, Petroleum Division, Annual Safety Congress and Exposition, Chicago.

DEVELOPMENT OF SAFETY CODE PLAN

The safety code as used in the Atlantic Refining Co. is a development of what we called our plant regulations. In any particular line of work such as spray painting, cleaning tanks, docking boats, handling tetra-ethyl lead, boiler house operation, cracking still operation, we have written up plant regulations for the guidance of plant superintendents. These regulations are made up in mimeograph form issued by the plant manager under serial number and the year. They are reviewed, and revised if necessary, at regular times, usually annually. They are placed in binders held by each superintendent or department head.

In the form originally given out these instructions were for the use of supervisors. Our general safety committee felt that copies should be put into the hands of every worker affected by these regulations. We soon found, however, that the type of rule book required for the ordinary workman was very different from that required for the superintendent. In some cases we made the plant regulation in two parts; one containing all matters which pertained to the duties of the supervisors and a second part, called by us a safety code, of which we made enough copies not only to go in the superintendents' plant regulation binders along with the master regulation, but one for each worker in the department affected. The result has been the adoption of a series of safety codes for our workers which are written just for the workers. There is a considerable volume of data and instructions in the plant regulation on the same subject which applies only to executives or requires executive action.

REPORT DELAYED

The weekly report of the American Petroleum Institute on refinery statistics for the week ending October 10 has been delayed on account of the inability of companies to get their reports to the institute on the usual day due to the Columbus Day holiday last Monday.

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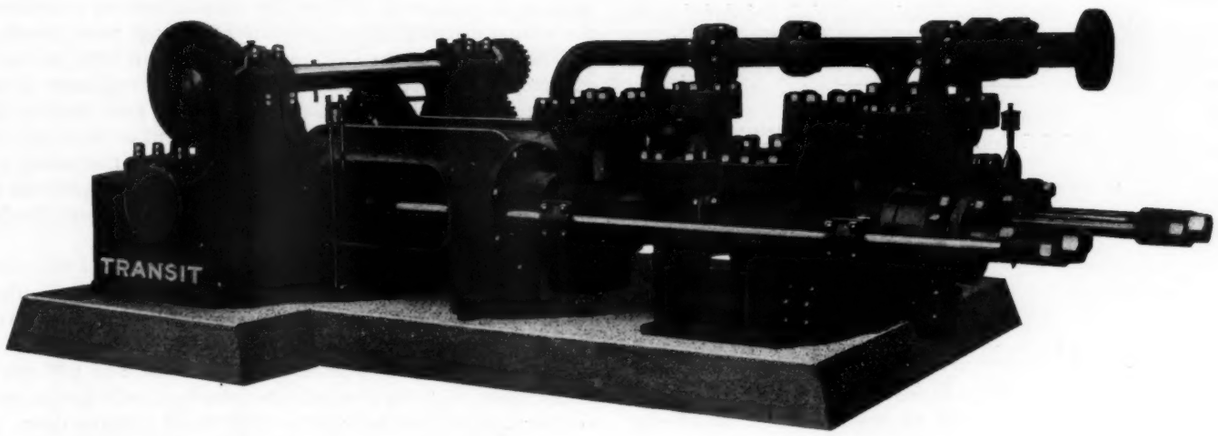

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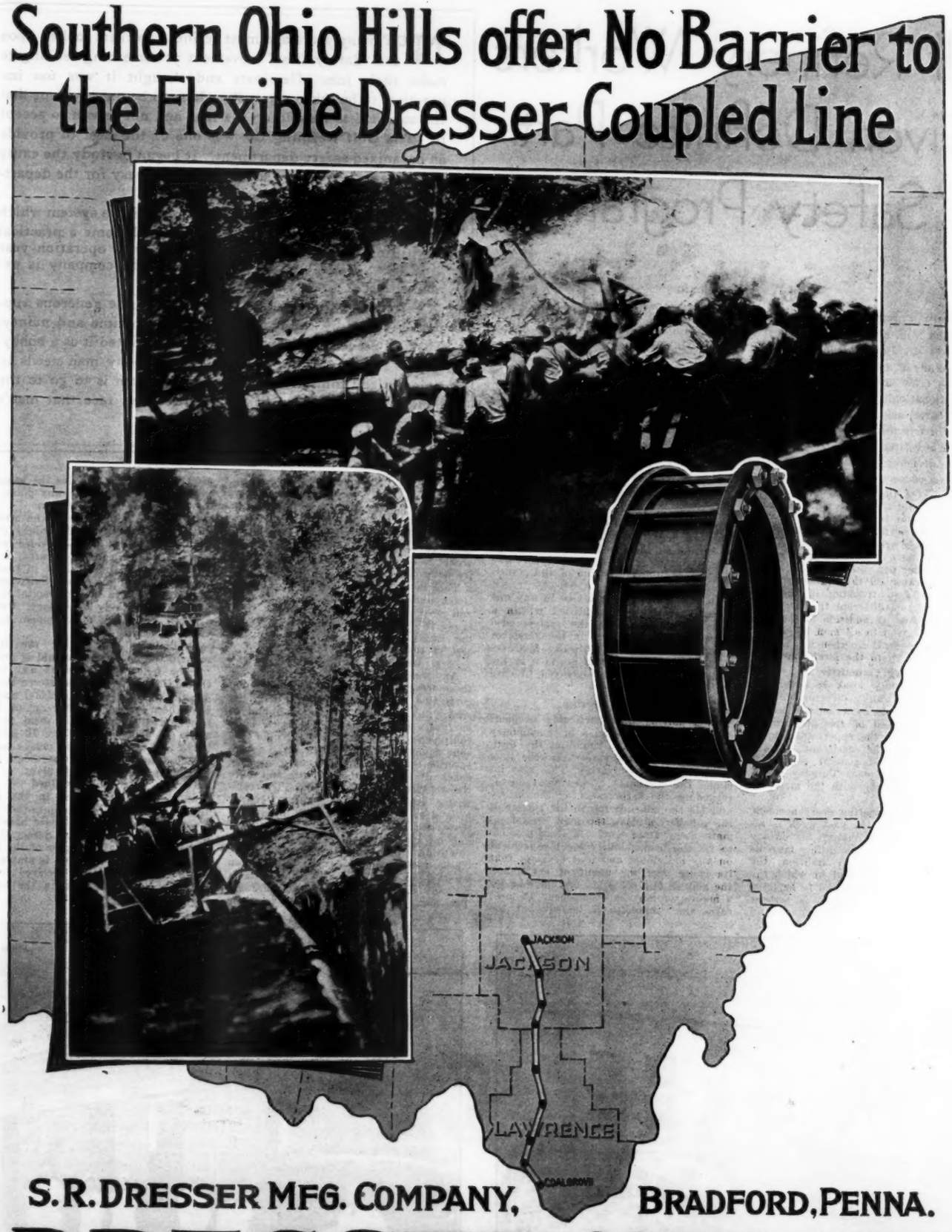

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DRESSER COUPLINGS DOMINATE

All Refinery Workers Given Definite Part in Safety Program

* * * * * *

By W. T. Ziegenhain

NOT many years ago most refinery workers looked upon the "Safety first" movement as something tending to make their jobs effeminate and thought it was too impractical to be taken seriously. It soon became evident that the men had to be sold on the idea and not driven to accept it. The Gulf Refining Co. was one of the first to provide an organized safety department. It began to study the cause of accidents. Within a short time it was easy for the department to show favorable results.

Then the problem became one of outlining a system which would hold the interest of the men and become a practical institution during the routine of the plant's operation year after year. The method employed by the company is explained here.

Success of the work no doubt lies in the generous support given it by the management in both time and money. Chas. R. Stevenson, plant manager, has adopted it as a hobby. As his reason he simply said, "All that any man needs in order to sell himself on the safety program is to go to the home of the man who has been killed and face that man's widow and little ones".

Safety is promoted at the Gulf Refining Co.'s plant at Port Arthur, Tex., by giving the rank and file of the workmen a definite part in the program. This is done by dividing the plant into five zones with the supervision of each zone in the hands of a committee of three men chosen from among the operators, construction crew and laborers. Each committeeman serves for two months and then automatically becomes chairman of that committee for one month. At the end of three months the chairman is relieved by the committeeman who has served for two months and thus the cycle provides for one new man each month and one is retired.

The division of the plant into five zones is made necessary because of the large area covered and because of the diversity in the operations. The different departments of the refinery are so separated that a division of plant permits the men of one zone to especially prepare themselves for emergencies which may most likely arise in that zone. As an example, the men in the acid plant might expect a higher percentage of acid burns than an operator on the cracking stills. Similarly, a man trucking in the can factory requires a different training than a stillman. Thus, in addition to the general training given to all men in preparing them for general emergencies, special attention is given to the local zone.

Safety Committee

All of the safety work is under the supervision of a safety director who, in turn, is responsible to a general safety committee composed of the plant manager as chairman, the superintendent of construction and the assistant general superintendent. This general committee meets at 11 o'clock each Tuesday morning and deals directly with the most detailed problems.

At this weekly meeting every accident that is reported for the past week is reviewed. The man receiving the injury and the one causing the injury may be asked to be present. In addition, the foreman of the department in which the accident happened is required to be present. When any one foreman is present at too many of these meetings, it automatically casts reflections against him and his department. Thus the practice of calling in the foreman has also kept the subject of safety a live one throughout the day-to-day routine of the plant's operations.

* * * *

In this manner, any laxity in any one department may be identified within a few weeks' time, and the system also places the responsibility in the hands of the foreman who is naturally held accountable for the care of his men in the same manner as he is expected to care for his equipment.

General Meeting

In reporting any particular accident at the general meeting, a brief summary of the conditions surrounding the accident is read by the safety director as a result of his investigation. This also includes the statement of the plant doctor regarding the seriousness of the injury and his recommendation in the matter of the number of days the man should remain away from work. If it is possible to fix the responsibility for the accident on any individual and if it develops that its cause was the result of negligence, the man is laid off for a few days or for a month, or may be discharged. In most cases the committee is lenient but the possibility of being laid off acts to keep the men constantly alert to the possibility of accidents. Because it strikes directly against the individual, the system keeps those workmen in line who might willfully violate general safety rules in order to display bravado before their fellow workmen.

This factor is a serious menace at all times and must be dealt with directly and severely as it comes to light. It it is not so handled, it would be possible for the careless element to intimidate the rest of the men.

Inspection of Equipment

An even more important function of these weekly meetings is to decide upon corrective measures in those instances where any equipment might be found to be faulty or hazardous. To locate such equipment is the principal duty of the zone committees. These men make an inspection trip through their respective zones at least once a month and note the condition of all facilities. The committee report may recommend guards around machinery, repairs to an uneven floor, new wiring, insulation for exposed hot oil or steam pipes and any other condition which may lead to an injury. These recommendations are acted upon by the general committee and almost without exception are carried through. The men are thus encouraged in their effort to seek and to solve the hazardous problems ever present in any plant.

Medical Attention

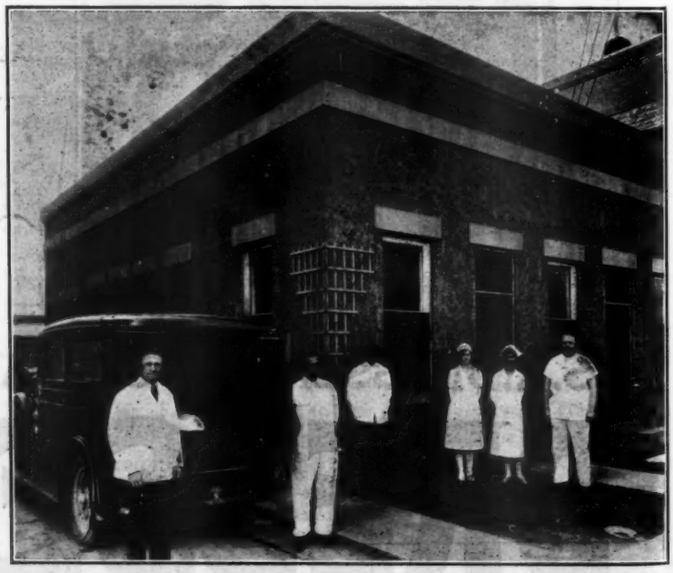
Of no less importance is the attention given the man after the injury occurs. The refinery has been provided with a hospital and a complete staff. A well-equipped ambulance is kept in readiness at the plant at all times. Sufficient capacity is provided in the hospital to handle practically any emergency. Surgical as well as first aid equipment is provided here also.

Preliminary to bringing the injured man to the hospital, first aid is provided by the fellow workman at any one of the 13 first aid stations scattered throughout the plant. More than 2,500 employes have been given the Bureau of Mines first aid training to fit them for this work. In addition there are 16 stretcher boxes, 125 canister type masks and 18 air hose masks placed at strategic points in all departments of the plant.

Interest Maintained

Interest is maintained in the safety first work by supplying up-to-the-minute information on the 36 bulletin boards. As a member of the National Safety Council and the Gulf Coast Chapter of the Petroleum Safety Council there is ample literature constantly being received to hold the interest of the men in the bulletin boards.

A room in the Port Arthur plant hospital where minor injuries are treated.



Hospital staff of the Gulf Refining Co. at its Port Arthur, Tex., plant.

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Russia's Crude Oil Supply Insufficient?

Reports Indicate Lack of New Fields and Reserves to Insure Continuance of Soviet Oil Production at Present High Rate

By A. E. Mockler
New York Bureau, The Oil and Gas Journal

NEW YORK, Oct. 12.—Reports from Russia by way of "grapevine" channels in recent months have hinted at the possible exhaustion of petroleum resources in that country and have intimated that the Soviet's program of refinery construction was being carried forward without sufficient assurance of an adequate supply of crude to keep these plants in operation.

While all of the official reports from Soviet sources have stressed the constructive developments in the refinery end of the industry, with mention of extensive exploration activities, it is significant to note that no new fields of major importance have been brought in recently, refiners operating on crude from the old fields, which are being rapidly depleted.

Partial confirmation of the uncertain outlook with respect to future supplies of crude in Russia is contained in a recent article in "Azerbaidjan Oil Industry," by Prof. D. Golubiantnikoff, advocating a more intensive search for new oil reserves.

"It is generally known," Professor Golubiantnikoff writes, "how rapidly the oil horizons are being drained in our old fields, but it is not clear to everybody that the end of their development is approaching and that instead of in tens of years, already in a few years' time the oil reserve of the old fields of the peninsula of Apsheron will be completely exhausted. New fields have been opened up as the result of successful explorations carried out by the Geological Research Bureau of the Aznefi, but, with the exception of Kara Tchukhur (southern extension of Surakhani structure), they are of only small importance compared with the old regions, while Kara Tchukhur alone cannot replace such fields as Surakhani, Romani, Sabuntchi, Balakhani and Bibi-Eibat, i.e., five fields of a world-wide importance. At best Kara Tchukhur can only yield another Surakhani provided intensive exploration is carried out, but even in this case we shall only be able to obtain 35 per cent of the present production of the peninsula of Apsheron.

"Whence is the production deficit to be found? Turning our attention to the other oil trusts we see that, as regards the exploration of new regions, matters are not only better but even much worse. We are too late with the exploration of new regions. Grozneft have extended their researches and explorations all over the whole Northern Caucasus, but, with the exception of Vosnesenka, Bekovitchi and Benoi, which are regions of secondary importance, no other areas have been opened up that could replace the present two main oil fields of Grozneft. The Maikop oil fields have yielded strong gas and oil gushers, but the oil is derived here from peculiar deposits of a limited extent which may be rapidly exhausted. The other oil regions of the Northern Caucasus are also of secondary importance.

"The Embaneft is known to have the largest number of oil fields. There are about 70 spots with oil seepages, but the areas fit for exploration are small and at best it can only be expected that oil fields similar to Dossor or Makat will be developed, i. e., fields of secondary importance. But even in these numerous spots with oil seepages the exploration is being carried out at a snail's pace. No new regions have, so far, been opened up that could replace Dossor and Makat, which are nearly exhausted.

"The recent discovery of oil in the Tchusoff Gorodki (Ene of Perm) is of great importance, but the oil deposits are here so peculiar and of such small extent that much work will have to be done and much time spent before the commercial value of the Tchusoff Gorodki is ascertained. The prospects, so far, offered by the Tchusoff Gorodki are behind those offered by the oil fields of Georgia, while the latter are also of secondary importance.

"Judging from the production of the wells so far obtained (about 1 ton) the Ukhta region, Upper Petchora region, eastern part of former Province of Archangelsk stands in the last place among the oil regions and ranks as a region of the third order as regards its importance.

"Finally, mention should be made of the Middle Asiatic oil fields and of Sakhalin. In Middle Asia we have Shor Su (Ferghana) with its gushers, but this oil field is of small extent and can hardly be expected to be able to compete with secondary regions of the Holy Island type.

"The last region to be mentioned is Sakhalin. In this island rich oil fields of world-wide importance are known to exist. The oil strata comprise over 13 horizons, of which only the upper horizons have been developed. The remoteness of the region and the fact that it is isolated from the continent are factors that considerably reduce the value of the oil fields and handicap the development of the oil industry.

"This short survey of our oil resources proves sufficiently conclusively that we should try by all means to find new fields in the interior of the country and not at the boundaries, otherwise other sources of energy will have to be sought for our industries.

"It should be pointed out that in the near future the greater part of the research for new fields will be in the Baku region, such fields being still available to Azerbaidjan."

Thus, while the producing end of the Soviet oil industry is apparently drifting into uncharted waters, the refining end of the business is still being rapidly expanded. There are some indications, however, that the refinery industry in Russia is still far from satisfactory. Considerable difficulty is being experienced with the quality of the gasoline produced, which is low in octane number, and not all of the installations of foreign refining equipment are working out as expected.

P. Viborov of Touapse in a recent article in "Neftuyanoy Hozyaestvo" writes of the experiences encountered in the operation of the German pipe stills in Russia. "Tubular stills of the Borrmann system erected at Touapse have now been in almost uninterrupted operation for about eight months (they are lying idle at the moment)," he writes, "and during that time have demonstrated some of their reliable aspects as well as

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CONVENTION EMPHASIZES VALUE OF PIPE LINE MAPS

The annual convention of the American Gas Association, held this week at Atlantic City, emphasized the value to every person connected with the natural and manufactured gas business, of the map compiled and published by The Oil and Gas Journal showing all natural gas trunk pipe lines in the United States. One speaker showed that these lines traverse areas adjoining the major coal fields of the country and pointed out the possibility of using such lines for the transmission of coal gas should the supply of natural gas become inadequate at any future time.

A big topic at the convention was the rapid expansion of natural gas pipe lines into territories formerly using manufactured gas. The Oil and Gas Journal's map shows this expansion very clearly and the cities and towns affected thereby.

The map is printed on heavy bond paper and on the reverse side is shown all oil and gasoline pipe lines in the United States. The price of the map is $1, postpaid.

Late Fields

GULF COAST

HOUSTON, Tex., Oct. 13.—Vacuum Oil Co.'s No. 5-A Farquahar, Lockport Field, Calcasieu Parish, Louisiana, has been completed flowing 1,000 bbls. of pipe line oil daily through a three-eighths-inch choke and registering a pressure of 900 pounds on tubing and 1,000 pounds on casing.

KANSAS

Derby Oil Co. and Gypsy Oil Co.'s No. 1 Sellers, SW cor. NW, Section 19-19-1w, in Ritz-Canton Pool, McPherson County, was given a 10-quart shot in the Viola lime and increased its production to 2,000 bbls. a day. Before the shot the well was estimated at 1,000 bbls. The Viola lime was found from 3,404-23 feet.

The Union Gas & Oil Co. is preparing to start a deep test north of Fort Scott, in Bourbon County, in the eastern part of the State. The test will be located on a large block of acreage. The test is expected to be drilled to a total depth of 3,500 feet which is considerably deeper than any of the other tests in the vicinity. It is estimated there are about 500 shallow wells in Bourbon County that are making both oil and gas. The exact location has not been announced as the

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HUMBLE'S STATEMENT ON EAST TEXAS AREA

AUSTIN, Tex., Oct. 13.—Humble Oil & Refining Co. has notified the Railroad Commission that it owns 15,886 acres in East Texas out of 113,988 or 13.94 per cent of the total acreage, and that as of September 23 the company had completed 267 wells out of 2,053 for the field or 13 per cent of the total.

Humble has produced to date 6,560,238 bbls. out of 68,287,208 bbls. for the field or 9.61 per cent of total production and has drilled one well to every 59½ acres owned. The company has 48 wells drilling and 13 rigging up or 61 active operations and under the program recently announced the number of drilling wells within 30 days will be reduced to less than 30 active tests.

MAGNETIC STORM

Tucson, Ariz., observatory of the U. S. Coast and Geodetic Survey report that a moderate magnetic storm started at 8 a. m. (C. S. T.) on the 12th and still continues as we go to press. Their telegram follows:

"Storm began twelfth. Fourteen. Moderate."

High Spots in Field News

SOUTHWEST TEXAS

Saxet Field has first big oil well—good for 1,000 bbls. a day. New Pettus Pool test cores saturated sand.

CALIFORNIA

Gain in California output and several wells scheduled for completion may cause increase. San Miguelito test uncertain.

OKLAHOMA

First day's production of Oklahoma City Field after shutdown new all-time record, 368.000 bbls. New leasing campaign on.

ROCKY MOUNTAIN AREA

Big play next spring in northeastern Colorado. More than 60,000 acres leased. Block southeast of Fort Morgan to be tested.

WEST TEXAS, NORTH TEXAS AND PANHANDLE

Allowable in West Texas cut 10 per cent, also North Texas fields. Panhandle to be considered later. Western Crane County well has oil showing.

NORTH LOUISIANA-ARKANSAS-MISSISSIPPI

Well in Jackson Field, Mississippi, estimated 35,000,000 feet. Two failures in Harrison County, East Texas. Three Trinity tests in Louisiana.

KANSAS

Twelve new locations in six counties made in past week. Southwestern gas areas and along the Ellsworth arch in central western section due for further exploration.

GULF COAST

Sixth new pool this year on Gulf Coast opened in Cameron Parish, Louisiana, with well flowing 1,000 bbls. Lockport also has 1,000-bbl. well. Manvel prospect well pressure increases and oil drops.

EAST TEXAS

East Texas allowable cut to 165 bbls. per well. Field has now 2,320 producers, with 126 completions and 136 locations during week. Wildcatting spreading to Rains, Red River and Houston Counties.

Wildcatting Spreading in East Texas

Blocks Assembled in Rains, Red River and Houston Counties. Now 2,320 Producers in Field, With 136 Locations and 126 Completions

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

DALLAS, Tex., Oct. 12.—A slowing up of drilling activities was reflected in East Texas this week when only 136 locations were reported for the district, a drop of 40 locations from last week when the record number of 176 first reports were recorded for the district. This report of decline in locations was received with considerable appreciation by several of the major producing companies who are earnest in their desires to see a decline in drilling activities in the district, and also by many of the independent operators and smaller companies who are against drilling a vast number of wells in the district at this time, especially since the allowable per well has been cut to 165 bbls. per day.

One company which has announced itself in favor of a curtailment of drilling activities, and which has always been conservative in drilling, was given a jolt this week when another company owning offset acreage staked locations for 11 offset tests and moved in rig material, thereby bringing pressure to bear upon the conservative company and forcing it to stake protective locations. However, several other companies are stacking tools as wells are completed, and are not moving in on many derricks which have been erected and are standing waiting for tools from other tests which are being completed.

The Sun Oil Co. is expending much effort in bringing about a curtailment of drilling in the district, and is now busy trying to keep one company from drilling about a dozen needless tests to the Sun's acreage, which is in outpost territory.

Production ran over 421,000 bbls. with 2,316 wells on production. With 2,320 wells on production at the present time the field will start off with a daily production of 382,800 wells, and another week's completion of around 100 wells will bring the daily total up to almost 400,000 bbls. in a week's time. There were 126 producers completed in the field this week, and at least that many should be completed during the next seven days.

Major Producers

A check up on activities of the eight major producers in the district shows them holding 47.29 per cent of the proven acreage, as based on the estimated 120,000 acres potential producing area. These companies hold 56,815 proven acres, are drilling 251 wells, and have 897 producing wells. The following is a tabulation of each company's holdings in the district:

Company—	No. acres proven	Active tests	Prod. wells
Humble O. & Ref. Co.	15,886	98	283
Gulf Prod. Co.	11,500	33	163
Shell Pet. Corp.	6,000	18	74
Sinclair O. & G. Co.	5,811	10	87
Sun Oil Co.	5,918	27	55
The Texas Company	4,300	22	36
Magnolia Pet. Co.	4,200	21	130
Tidal Oil Co.	3,200	22	69
Total	56,815	251	897

The Humble Oil & Refining Co. holds 13.94 per cent of the proven acreage; Gulf Production Co., 9.59 per cent; Shell Petroleum Corp., 5 per cent; Sinclair Oil & Gas Co., 4.83 per cent; Sun Oil Co., 4.10 per cent; The Texas Company, 3.59 per cent; Magnolia Petroleum Co., 3.57 per cent; Tidal Oil Co., 2.67 per cent. This report is as of October 9.

Practically all of the oil produced in the district is going out by trunk lines. Only a little over 21,000 bbls. per day was run to field and steel storage during the week, while tank car shipments have dwindled to around 7,500 bbls. per day. The only companies shipping any by cars are: Arkansas Fuel Oil Co., Crown Central Pipe Line Co., Cherokee Chief Oil Co., East Texas Refining Co., Houston Oil Co., Illinois Pipe Line Co., and Pilot Oil Co.

One of the trunk pipe line companies has had more connections and oil than it desired to run, and another company took over some of its connections, but the majority of the companies have large outlets from the district, are still soliciting connections.

Interesting Cherokee Test

An interesting test is to be drilled on the S. S. Stone 96-acre farm in the M. D. Los Santos Coy Survey in northeastern Cherokee County, southwest of the present Sharp producer of the Mid-Kansas Oil & Gas Co., which was completed a couple of weeks ago. This new test will prove whether this county is to get production, and the Joiner Pool extended still farther to the southwest.

Bunte and others are to drill a test on a 5,000-acre block north of Troup in Smith County, to be spudded by December 1. This will be an interesting test although held by some to be in the water territory.

The Amerada Petroleum Corp. and Humble Oil & Refining Co. have donated acreage to two individuals who are to drill two tests in Upshur County, one north of the town of Kelsey and the other 2 miles east of Kelsey. The tests will be located near the supposedly subsurface high which the Amerada corporation tested when it sank a deep test on the Wade farm. The test was dry. Cranfill & Reynolds have taken 500 scattered acres in the area around the two Kelsey tracts, and other companies may also take protection acreage.

Wildcatting Spreads

Wildcatting seems to be getting more attention in East Texas at this time, and several counties in the district have been insured tests which are to spud within the near future. L. B. Pruitt has assembled a block of 7,000 acres in Rains County, northwest of Smith County, and a block of 8,000 acres has been assembled near the town of Bagwell in Red River County, near the State line. The Union Oil Co. of California will take over this block, and no doubt drill a test.

The Apex Drilling Co. encountered an estimated 20,000,000 feet of gas in its No. 1 Thompson Brothers test, in the John Shears Survey, Houston County, south of Anderson County. The latter county has production, mainly in the Boggy Creek Field, which is on the Anderson-Cherokee County line. Houston County has some gas production near the town of Crockett. The gas showed up on a drill stem test from 2,354-64 feet.

The Atlantic Oil Producing Co. made another purchase in Gregg County, taking over 35 acres in the G. W. Hooper and Clements Survey, and 21 acres in the D. Sanchez Survey.

Cranfill & Reynolds sold their Mollie Finn lease and one producing well northeast of Gladewater in western Gregg County to Massey and others for $50,000 in cash and $32,000 out of one-fourth of the first oil produced.

Unitization Completed

The Simms Oil Co., Stanolind Oil & Gas Co. and Continental Oil Co. have completed the unitization of 400 acres in the Marshall Mann Survey, lying partly in Gregg and partly in Upshur County. The Stanolind Oil & Gas Co. will operate the lease.

Companies holding leases in the Cole and Walker areas in western Gregg County, where there are several wells which are making salt water, have been warned by the Texas Fish and Oyster Commission to take precautions against contamination of the Sabine River. Companies having leases near streams or rivers may expect trouble from this commission if they do not make arrangements for handling salt water and waste oil. Many of the companies have anticipated such troubles, and have been studying plans for the elimination of such water.

The Sun Oil Co.'s No. 1 Watkins in the Pineda Survey, approximately 3 miles north of Gladewater in Upshur County, definitely limits production to the north of it for it is making 100 per cent salt water at a total depth of 3,739 feet. Broken sand was cored from 3,664-70 feet, and red beds and shale were cored at 3,686 feet. The test has producers on three sides of it, but the well to the east, about a mile, is a small producer. There are two producers on the west less than a quarter of a mile.

Wells Making Water

Following is a list of wells that are making water on the west side of the East Texas Field:

Company, lease and survey—	% B.S. and water
GREGG COUNTY	
Harper and Neff's No. 1 Cole, Bramlett	2
Continental's No. 1 Crews, L. Perkins	24
Mazda's No. 1 Cotton, W. P. Chisum	6
Sinclair's No. 1 Cole, S. Brooks	1
Sinclair's No. 7 Cole, S. Brooks	3
Sun's No. 1 Walker, W. M. Friars	42
Magnolia's No. 1 Cole, T. Johnson	30
UPSHUR COUNTY	
Stanolind's No. 1 Everett, W. Goodwin	50
Taxman's No. 1 Callahan, E. A. J. Evans	11
RUSK COUNTY	
Magnolia's No. 1 Florey, P. W. Holmes	12
Shell's No. 1 Wills, W. P. Chisum	5
McMahon's No. 1 Wills, W. P. Chisum	1
Brown-Wilson's No. 1 Terrell, E. G. Sevier	2
Burton's No. 1 Florey, P. W. Holmes	5
Phillips Co.'s No. 1 Gipson, Thos. Lloyd	66
E. Tex. Co.'s No. 1 Wills, W. P. Chisum	1
Guthrie's No. 1 Perry, A. M. Ryan	4
Sun Oil Co.'s No. 1 Barker, A. M. Ryan	2
Stanolind's No. 1 Christian, W. R. Cook	4
Chapman's No. 1 Russell, W. R. Cook	(*)
Elliott's No. 1 Terrell, A. M. Ryan	(†)

*Plugged. †To plug back.

New Van Proration

A meeting will be held by the Railroad Commission in Austin on October 13 to discuss a new form of proration for the Van Field, Van Zandt County. Engineers and production men have been working on this new plan for some time, and it is considered to be far superior to the present plan, at least for this field, where the sand body is of a more uniform nature than in other fields in the district.

This plan will place the allowable for each lease on the number of acre-feet of sand underlying the lease, if a lease has 100 feet of sand underlying it, and another lease has 600 feet of sand underlying it, the latter lease will be given an allowable six times as great as the former. All wells in the field have been cored, a complete set of samples from each foot of core have been taken and analyzed for porosity, the amount of shale has been determined, and other pertinent analyses made, and it is believed that under such a plan a more equitable distribution of the production can be obtained for those who have production in the field. Such a plan will also enter in cutting down further drilling of new wells in the field.

The plan may be workable in this field, where only six companies have production, and where engineers have watched closely the production of the field, and made a thorough study of sand conditions and production, but would be absolutely initial production 115 bbls. per hour

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EAST CENTRAL TEXAS WILDCATS

Week Ending October 12

ANDERSON COUNTY

Company, well, farm name, section and block— Remarks:

Riango Oil Co.'s No. 1 J. Lynn, 1,400 ft. from NE line and 7,425 ft. from E line of survey, R. Brown Sur. ..Shut down 2,755 ft.

H. B. McConnell et al's No. 1 N. B. Watson, 500 ft. from W line and 4,850 ft. from N of S line of survey in S half of 129-ac. tract, M. Main Sur. .....Rig up and shut down.

BOWIE COUNTY

Tom Bell's No. 1 Merritt, 1,225 ft. from N and 875 ft. from E line of survey, T. S. McKinney Sur. .....Coring 3,225 ft.

Logan and Elliott's No. 1 J. W. Smith, 9,600 ft. S and 3,500 ft. W of NE cor. of survey, Charles Lewis Sur. .....Drlg. 4,485 ft.

Parkering-Jones et al's No. 1 W. W. Whybark, 200 ft. from S and W of SW cor. of J. A. Dyer Sur. .....Shut down 1,102 ft.

Lee Timberlake et al's No. 2 Julius N. Tidwell, 555 ft. from E and 2,510 ft. from S of survey in L. M. Rice Sur. .....Salt water on drill stem test; shut down 3,012 ft.

CHEROKEE COUNTY

Bridges and Candler's No. 1 Berryman, center of Berryman tract, James Dill Sur. .....Shut down 1,000 ft.

Denman et al's No. 1 Mrs. Renfroe, 330 ft. N of S line and 330 ft. E of W line of farm, Uriah Moore Sur. .....Derrick.

Helen-Clare Oil Co.'s No. 1 Mrs. M. P. Perkins, 1,800 ft. from N and 450 ft. from W of survey, Thomas Stafford Sur. .....Rig up.

DALLAS COUNTY

Paris' No. 1 Wilkinson, 2,787 ft. from NW and 3,341 ft. from SW of John P. Anderson Sur. .....Drlg. 1,141 ft. in sand.

DELTA COUNTY

D. S. Hood's No. 1 J. J. Balser, 185 ft. from S and 530 ft. W of Balser 40-ac. tract in SE cor. T. B. Laddin Sur. .....Shut down 1,553 ft.

ELLIS COUNTY

Cark Brooks' No. 1 C. W. Golliday, 300 ft. from S line and 300 ft. from E line of tract and survey, John Bones Sur. .....Drlg. 300 ft.

Community Oil Co.'s No. 1 Nash .....Derrick.

E. M. Roger's No. 1 John Lee Winn, 1,650 ft. from E and 510 ft. from S of Orland .....Shut down 1,435 ft.

Worthen Pet. Co.'s No. 1 Cerf, 2½ miles NE of Ennis ..Preparing to set casing 2,210 ft.

FRANKLIN COUNTY

Tom Harper's No. 1 fee, 150 ft. from N line and 200 ft. from E line of 116-ac. tract, W. M. Dawson Sur. .....Derrick.

FREESTONE COUNTY

Raley and Clark's No. 1 McLancaster (Pampier), 150 ft. from E of W line and center of N and S line B. Avant Sur. .....Derrick.

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Showing of Oil in Western Crane Test

More Locations in the Panhandle District Than for Weeks. West Texas Allowable Cut 10 Per Cent. Distribution Declines

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Oct. 12.—Penn Oil Co. and others' No. 1 Tubb, in Section 3, Block 27-B, western Crane County, encountered its first showing of oil this week, striking a small show at 2,920 feet. It formerly encountered a gas showing at 2,665 feet, but the gas was exhausted as drilling continued. The gas showing, however, corresponded with a gas showing struck in the discovery well of the area, Gulf Production Co. and Cranfill Brothers' No. 1 Tubb, in Section 8, 1½ miles to the southeast, and the test is considered as having good chances for making a good producer. Nothing much will be known as to definite possibilities until the test gets to around 4,300 feet, where the discovery topped the pay. The discovery had an increase in gas at 4,595 feet and an increase in oil at 4,606 feet.

Distribution from West Texas dwindled almost 11,000 bbls. per day during the week ending October 6, pipe line runs falling off from 248,484 bbls. per day to 238,633 bbls. per day, making up the greater part of the decrease in distribution. This was reflected on the withdrawals from storage, withdrawals falling to 25,490 bbls. per day, whereas the previous period showed a total withdrawal of 71,175 bbls. per day. The Shell Pipe Line Co.'s line to Houston took 5,000 bbls. less per day during the last period, possibly due to the company running more through its line from East Texas, and fulfilling the demands of the company's Houston refinery, cutting down runs from the sulphur producing district of West Texas. Humble Pipe Line Co.'s line to San Angelo and thence to the Gulf took considerably less oil for the week than it did for the previous week, while the Atlantic Pipe Line Co.'s line to Houston also cut its runs. The Magnolia Pipe Line Co. increased its runs to De Leon and thence to the Gulf Coast.

Pipe line connections are not as easy to obtain in East Texas as one might perhaps think, some of the companies not getting all the connections they desire, consequently oil from the West Texas district should continue to be in the same demand it has been for the past few months when withdrawals from storage have amounted to several thousand barrels per day, emptying much of the oil from storage in that district.

West Texas Allowable

Allowances for all West Texas fields were cut 10 per cent by the Railroad Commission at its hearing at Austin on October 10. The allowable from the Yates Pool, Pecos County, was cut 7,000 bbls. per day. The operators had formerly asked for a 6,000-bbl. cut. The Big Lake Field, Reagan County, was cut 2,000 bbls. per day; Crane-Upton was cut 1,855 bbls. per day; Howard-Glasscock was curtailed 2,707 bbls.; Penn Pool, Ector County, 700 bbls.; Winkler, 4,800 bbls. per day. The Yates Pool has been producing under an allowable of 70,000 bbls. per day; Reagan County has been producing better than 23,000 bbls.; Howard-Glasscock, 28,000 bbls.; Ector County, 7,500 bbls., and Crane-Upton, 20,000 bbls. per day.

The Big Lake Oil Co. has spudded its No. 6-C University in the Big Lake Field, Reagan County, the tenth deep test to be drilled in the field. Twenty-two inch surface casing has been cemented at 55 feet. There are only three deep wells now on production in the field. These are: Big Lake Oil Co.'s Nos. 1-C and 5-C University and Group No. 1 Oil Corp.'s No. 4-B University. No. 1-B University is now cemented, killing production, and 5⅞-inch casing is being cut off in 100-foot sections to be pulled from the hole. The pipe has been stuck, and such cutting was necessary in order to pull it.

Buster Black's No. 1 Hall & Roberts, in Section 14, Block 34, H.&T.C. Railway Survey, Ward County, is establishing another extension to production in Ward County. The well is approximately 3 miles north of the Texas-Pacific area, and in line with the Bennett Pool. The well is now cleaning out at 2,446 feet after making a 25-bbl. head on October 8. Pay was topped at 2,445 feet, although it had several oil and gas showings above this depth.

WEST TEXAS PRODUCTION
Week ending October 10

County—	No. wells	Prod.
Andrews	0	0
Crane	377	15,793
Crockett	51	1,165
Ector	78	7,588
Fisher	11	946
Garza	2	0
Howard-Glasscock	543	28,448
Irion	9	57
Jones	36	1,352
Loving	46	3,488
Mitchell	111	1,782
Pecos	549	73,802
Reagan	355	23,345
Runnels	5	65
Scurry	5	0
Upton	263	5,020
Taylor	3	56
Ward	69	3,504
Winkler	595	37,377
Total production this week		203,793
Total production last week		203,805
Decrease		12

NORTH TEXAS

Allowances for North Texas fields were cut 10 per cent by the Railroad Commission on October 10, and a hearing affecting the Panhandle will soon be called. The commission is now studying data presented to it at the Amarillo hearing last week. The gas-oil ratio will no doubt be cut considerably, as there is much gas now being wasted in the Panhandle district, and the commission is desirous of cutting down this waste, if not entirely eliminating it.

NORTH TEXAS PRODUCTION
Week Ending October 10

Panhandle district—	Bbls.
Carson County	5,544
Gray County	43,339
Hutchinson County	13,700
Moore County	1,103
Potter County	0
Wheeler County	350
Total production this week	64,536
Total production last week	64,187
Increase	349
Wichita Falls district—	
Archer County	11,678
Baylor County	635
Clay County	432
Cooke County	1,653
Foard County	72
Haskell County	26
Jack County	2,009
Montague County	3,242
Throckmorton County	470
Wichita County	17,259
Wilbarger County	12,196
Young County	11,196
Total production this week	60,778
Total production last week	59,628
Increase	1,150
Ranger district—	
Brown County	3,014
Callahan County	1,445
Coleman County	2,016
Comanche County	733
Palo Pinto County	359
Eastland County	2,682
Shackelford County	3,230
Stephens County	4,157
Total production this week	17,654
Total production last week	17,276
Increase	380

PANHANDLE DISTRICT

There were more locations staked in this district during the week than for

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WILDCAT OPERATIONS IN WEST TEXAS

Week Ending October 12

BREWSTER COUNTY

Company, well, farm name, section and block— Remarks:

Brewster Oil Co.'s No. 1 fee, 2,646 ft. S and 2,598 ft. E of NW cor. Sec. 46, Blk. G-15, G.C.&S.F. Sur. ..... Shut down 1,935 ft.

E. L. Chapman's No. 1 Skinner, C SW SE Sec. 100, Blk. 2, G.C.&S.F. Sur. ..... Shut down 1,302 ft.

Trans-Pecos Oil & Gas Co.'s No. 1 Jones, 330 ft. from N and 2,500 ft. from E of Sec. 18, Blk. G-15, G.C.& S.F. Sur. ..... Shut down 2,906 ft.

Van McPhail's No. 1 McIntyre, SE cor. Sec. 59, Blk. 352, 7 miles south Alpine ..... Shut down 1,750 ft.

COCHRAN COUNTY

Penn Oil Co.'s No. 1 Myrick, C Labour No. 30 of League 129, Carson County School Lands ..... Drlg. 1,775 ft.

CONCHO COUNTY

Beesley et al's No. 1 Waring Estate, 400 ft. from N and E Sec. 163, T.&N.O. Sur. ..... Shut down.

Betts & Dennis' No. 1 H. E. Woods, 710 ft. from E and 150 ft. from S Sec. 3, H.E.&W.T. Sur. ..... Shut down 80 ft.

Turner et al's No. 1 Borsig, 150 ft. from S of NE cor. G. Emmig Sur. 136, 6 miles W of Paint Rock ..... Shut down 1,850 ft.

CRANE COUNTY

Southwest Oil Prod. Co. (Cranfill Bros.) & Penn Oil Co.'s No. 1 J. B. Tubb, 330 ft. from N and E of SW cor. of S 80 acres of NW cor. Sec. 3, Blk. B-27, P.S.L. Sur. ..... Drlg. 2,920 ft.; small show oil.

CROCKETT COUNTY

Deleman & Moore's No. 1 Ferner, 2,135 ft. from N and 1,485 ft. from E of Sec. 36, Blk. 3, L&G.N. Sur. ..... Spudded and shut down.

CULBERSON COUNTY

Kornrumpf et al's No. 1 Garren, 330 ft. S and W Sec. 15, Blk. 79, Public School Land ..... Shut down 1,300 ft.

DAWSON COUNTY

Albaugh et al's No. 1 Robinson, C NW Sec. 46, Blk. M, E.L.&R.R. Sur. ..... To resume drilling.

ECTOR COUNTY

Weekly Oil Corp. et al's No. 1 Cowden, 1,980 ft. from N and W Sec. 38, Blk. 43, Twp. 2s, T.&P. Sur. ..... Drlg. 800 ft.

H. F. Wurts' No. 1 E. A. Ibbetson et al, 330 ft. from N and E lines of NW Sec. 16, Blk. 46, Twp. 2s, G.M. M.Br.&A. Sur. ..... Shut down 3,280 ft.

EL PASO COUNTY

Tri-State Oil Co.'s No. 1 Bobadella, 1,326 ft. from S and E lines Sur. 354, S.F. No. 7,347 ..... Shut down 1,693 ft.

FISHER COUNTY

The Texas Company's No. 1 Daniels, 357 ft. from S and 330 ft. from W lines of Sec. 194, Blk. 1, B.B.&C. Sur. ..... First hole lost; drlg. 1,515 ft. on new hole.

Cranfill & Reynolds' No. 1 George, 400 ft. from N and 330 ft. from E. Sec. 200, Blk. 1, B.B.&C. Sur. ..... Drlg. 2,935 ft.

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WILDCAT OPERATIONS IN TEXAS PANHANDLE

Week Ending October 12

CARSON COUNTY

Company, well, farm name, section and block— Remarks:

Empire G. & F. Co.'s No. 1 Poling, 1,320 ft. S and W. Sec. 38, Blk. Y-2, T.T.R.R. Sur. ..... S.D. 2,725 ft.; T.P. 2,515 ft., 12,000,000 ft. gas.

Magnolia Pet. Co.'s No. 1 Connell, 330 ft. N and E, SE. Sec. 66, Blk. 4, H.&G.N. Sur. ..... S.D. 2,112 ft.; standardising.

Texhoma Nat. Gas Co.'s No. 1 Harrison, center NW, Sec. 40, Blk. 4, L&G.N. Sur. ..... Rigging up standard tools.

Texhoma Nat. Gas Co.'s No. 1 Dover, 1,335 ft. from S. 656 ft. from W, Sec. 81, Blk. 4, L&G.N. Sur. ..... Drlg. 475 ft.

Texhoma Nat. Gas Co.'s No. 1 McLaughlin, center NW, Sec. 61, Blk. 4, L&G.N. Sur. ..... Drlg. 515 ft.

Texhoma Nat. Gas Co.'s No. 2 Schoffer, center SE, Sec. 64, Blk. 4, L&G.N. Sur. ..... Drlg. 458 ft.

CHILDRESS COUNTY

C. L. Sloan et al's No. 1 B. P. Smith, Sec. 49, F. P. Knott lands ..... T.D. 5,000 ft.

COLLINGSWORTH COUNTY

Dixon et al's No. 1 Bell, 330 ft. N, 1,320 ft. W, Sec. 102, Blk. 21, H.&G.N. Sur. ..... S.D. 2,508 ft.

Downey et al's No. 1 Beasly, SE cor. SW SE, Sec. 95, Blk. 15, H.&G.N. Sur. ..... Rigged up.

GRAY COUNTY

Anderson et al's No. 2 Vollmert, 330 ft. N and W, SW, Sec. 140, Blk. 3, L&G.N. Sur. ..... Rig.

Back & Barber's No. 1 Back, 660 ft. from S and 330 ft. from W, Sec. 140, Blk. 35, H.&G.N. Sur. ..... Rigging up rotary.

Boyles et al's No. 1 Colebank-Morse, 330 ft. NE, Sec. 65, Blk. 25, H.&G.N. Sur. ..... Spudded and S.D.

Brown et al's No. 1 Duncan, 330 ft. S and E, NW, Sec. 93, Blk. 3, L&G.N. Sur. ..... Drlg. 2,095 ft.

Parton Holt and Shell Pet. Corp.'s No. 1 Morse, 330 ft. S and E, Sec. 6, Blk. 26, H.&G.N. Sur. ..... Drlg. 1,360 ft.

Jean Pet. Co.'s No. 1 Furneaux Bros., 330 ft. N and W, cor. SE, Sec. 206, Blk. B-2, H.&G.N. Sur. ..... Drlg. 2,947 ft.; 6,000,000 ft. gas at 2,825-50 ft.

Magnolia Pet. Co.'s No. 1 Arnold, 330 ft. from S and E, Sec. 149, Blk. 3, L&G.N. Sur. ..... Location.

Magnolia Pet. Co.'s No. 1 Heaston, NE cor. S½ NE, Sec. 164, Blk. 3, L&G.N. Sur. ..... Rigging up rotary.

Nelson et al's No. 1 Crews, 330 ft. S and E, NW, Sec. 12, Blk. 25, H.&G.N. Sur. ..... S.D. 2,619 ft.

Nipper et al's No. 1 Morse, 330 ft. from N and E, Sec. 1, Blk. 24, L&G.N. Sur. ..... Spudded on October 5.

Prairie Oil & Gas Co.'s No. 1 Morse, 330 ft. from N and E of Sec. 4, Blk. 26, H.&G.N. Sur. ..... Location.

Pulse-Shell Pet. Corp.'s No. 1 Wright, 330 ft. from S and W of Sec. 13, Blk. 3, L&G.N. Sur. ..... Rigging up rotary.

Skelly Oil Co.'s No. 1 Heaston, 330 ft. from S and E N half NE, Sec. 164, Blk. 3, L&G.N. Sur. ..... Building rig.

(Continued on Page 85)

Three 1,000-Bbl. Maloneys at Joinerville, in East Texas.

Our *Vapor-Pressure* Construction Removes all excuse for allowing oil to be Wasted by Breathing

IN the past, when little could be done to prevent breathing, there was some excuse for ignoring its serious consequences. But NOW, when Maloney *Vapor-Pressure* Tanks are available, every producer should learn how much income he loses by allowing breathing to take its toll, and how much his income would be increased by using our *Vapor-Pressure* tanks to hold his oil at well gravity and volume until actually delivered to the pipe line.

Our Vapor-Pressure Flow and Stock Tanks have efficient combination valves set at 16 ounces pressure and ½ ounce vacuum in order to restrict the movement of vapors. They are made of 12-gauge (or heavier) rust-resistant Keystone Copper Steel, with heavy 2″ angle ties and reinforcements. Our special aluminum paint is made with a vehicle containing water-proof and alkali-proof Inhiburine, insuring unusual durability.

MADE OF

AMERICAN

MALONEY PATENTED BOLTED COPPER-STEEL TANKS

"Alone in Quality"

. . . . . MALONEY TANK MFG. COMPANY . . . . . .

108 N. Peoria Ave., Tulsa, Oklahoma

Distributers at All Principal Petroleum Points

Packed in Steel-Bound Crates for Export

MALONEY

Pipe Line Construction News

SECOND HUGE PIPE LINE PROJECT CONTEMPLATED

Construction of a second 24-inch natural gas pipe line from the Texas Panhandle to Chicago is contemplated by the Continental Construction Co., which recently completed the 24-inch line to Chicago for the Natural Gas Corp. of America. The time of building the second line will depend upon the rate at which the load of the present line can be connected and markets expanded. The single line as designed has a capacity approaching 200,000,000 feet daily while the double line will have a capacity of 400,000,000 feet a day, depending upon the pressure carried.

The present line of the company is the largest natural gas project in the world being close to 950 miles long with a diameter throughout of 24 inches. The line was completed August 5 and is ready to deliver natural gas to Chicago and other points.

SUN GASOLINE LINE IS TO BE EXTENDED

SYRACUSE, N. Y., Oct. 12.—Extension of the gasoline pipe line system from Syracuse, present northern terminus, to the shores of Lake Ontario, is being considered by officials of Sun Pipe Line, Inc., controlled by Sun Oil Co.

The line was completed to Syracuse in August and is now being used in the distribution of gasoline of Sun Oil Co. throughout this area. The line to Syracuse feeds the tankers on the state barge canal, tank cars on the New York Central and Lackawanna Railroads and tank trucks on the state's highways. The company serves almost all the State, from Buffalo on the west to Albany on the east, from the pipe line terminating here.

Extension of the line to Lake Ontario, some 40 miles from here, is proposed so as to have a distributing point for the entire Great Lakes region.

MIDLAND GETS GAS

Consumers Power Co. began last August to furnish gas to Midland, taking it from the Broomfield Township Field, west of Mount Pleasant, through a 40-mile pipe line costing $250,000. At the same time, the Gas Corp. of Michigan began to furnish gas to Mount Pleasant, Clare and Rosebush from the Vernon Township Field.

Consumers Power Co. is closely watching the effects upon the Broomfield wells of taking Midland's supply. Should the wells stand up and should adequate reserves be developed in this and other Central Michigan fields, it is probable the natural gas service will be extended to Bay City or Saginaw, both within easy reach of the field.

Gas Corp. of Michigan officials estimate there are reserves in the present Vernon and Clare proved fields, sufficient to supply 1,000,000 feet of gas a day for 17 years. Muskegon, at the height of its natural gas usage, was consuming 18,000,000 feet a day. Under the law of 1929, only 25 per cent of the well's normal open flow can be taken.

WILL NOT BUILD PIPE LINE

HOUSTON, Tex., Oct. 12.—The Texas Pipe Line Co. has denied the report it will lay a 20-mile stretch of pipe line from the Markham Field, Matagorda County, to a connection with the company's West Columbia-Houston line. The company has been buying Markham oil but is moving it out by tank cars from a loading rack at Bay City.

FEDERAL GAS PIPE LINE COMMISSION PROPOSED BY STATE COMMISSIONERS

A bill to provide for the regulation of interstate gas business, designed to replace one (S. 5,030) introduced in the Seventy-first Congress by Senator Capper (Rep.), of Kansas, has been prepared by a committee of the National Association of Railroad and Utilities Commissioners and distributed to the members of that organization.

The measure as it will be considered at the annual meeting of this association at Richmond, Va., October 20-23 provides that it shall not "be construed in any way to diminish the existing powers of the states to regulate the rates and service of gas utilities, but the same shall be construed as intended only to confer jurisdiction upon the commission to regulate such wholesale gas business in interstate or foreign commerce as is conducted under such circumstances as to be beyond the reach of state regulation. Nothing in this act shall affect the powers of taxation in the several states."

The drafting of the new bill resulted from a conference of state commission representatives at St. Louis, Mo., last January upon call of the Kansas Public Service Commission, at whose instance the Capper bill had been introduced. At this conference the conclusion was reached that the Capper bill should be revised and a committee was appointed to consider such revision in conjunction with the executive and legislative committees of the National Association.

Like the Capper bill the measure now to be considered by the state commissioners provides for the creation of a Federal Gas Pipe Line Commission to be composed of three members.

Instead, however, of conferring upon this commission jurisdiction over all interstate gas business, the proposed new bill would authorize the commission only to regulate the rates and service of utilities engaged in the transportation or sale of gas sold or to be sold to the public in interstate or foreign commerce in wholesale quantities, "so far as such rates and service are now subject to regulation by the states, saving to the several states their existing jurisdiction to regulate the rates and service of gas utilities engaged in the sale of gas to consumers within the respective borders of such states, and the transportation of gas wholly within such borders, whether or not such sales to consumers be in interstate or foreign commerce."

The bill provides for "an agency of the United States" to which the commission may refer a complaint respecting the rates of a wholesale gas utility. This agency is to be known as a joint board, composed of one representative from each state in which the gas covered or to be covered by the rates complained of is produced or consumed.

Such a joint board, the bill provides, shall have all the rights, duties and powers conferred upon the commission, except the power to make a final order upon any matter referred to it.

The commission is given power to regulate the rates of wholesale gas utilities and to suspend any proposed increase. It is provided, however, that a utility may make such increased rates effective, notwithstanding a suspension order, upon filing with the commission a bond conditioned to secure the refund to the persons entitled thereto of the amount of the excess, if the rates so put into effect are finally determined to be excessive.

ECONOMIES FOUND IN AUTOMATIC STATIONS

Marked economy possible through use of automatic and supervisory control of pumping stations is reported. The Texas Empire Pipe Line Co. has operating on its system some 10 large electrically-driven pump stations. At one of the stations near Tulsa, it is pioneering in a practical demonstration of equipment and operating methods, involving the use of automatic switching and supervisory control, which promises large savings for the pipe line industry.

A study has been made to show the economies possible in case such equipment would be installed on the basis of a typical 451-mile pipe line section with nine equally spaced pumping stations. An economic analysis by Westinghouse engineers shows a clear profit of 23 per cent on the additional investment required, after deducting 18 per cent carrying charge to cover interest, depreciation, taxes and insurance. These savings are made possible through the use of automatic and supervisory control of pumping stations. By this means a whole group of pumping stations can be placed under the direct control and supervision of a centrally located dispatcher. The usual three operators for each station are eliminated, together with the considerable expense of providing housing facilities for them.

PIPE LINE CROSSING AGREEMENT PROPOSED

A standard form of agreement covering pipe line crossings under railroad tracks, submitted to the American Petroleum Institute by the American Railway Engineering Association, will be considered at a committee meeting to be held Thursday, November 12, at 10:30 a.m., in connection with the institute's twelfth annual meeting in Chicago.

The committee, appointed by Robert R. Penn, Penn Oil Co., Dallas, Tex., chairman of the division of production general committee, will elect its chairman at that time.

CHURCH-FIELDS, McCAMEY GASOLINE LINE READY

FORT WORTH, Tex., Oct. 12.—The gasoline line under construction from the Phillips Petroleum Co.'s gasoline plant in the Church-Fields Pool, Crane County, to McCamey is now completed and ready for transportation of gasoline from the plant to loading rack at McCamey. This is the first gasoline line to be constructed in the West Texas district. The Humble Oil & Refining Co. was previously mixing the gasoline from the plant with crude oil in one of its main trunk lines out of the district, thereby raising the gravity of the oil.

SOCONY GASOLINE LINE TO SPRINGFIELD, MASS.

NEW YORK, Oct. 12.—Standard Oil Co. of New York announces construction of 98 miles of 6-inch pipe line for gasoline from East Providence to Douglas and Springfield, Mass., branching from Douglas to Worcester.

BIG DEMAND FOR MAPS

Railroad rate hearings and other developments affecting the petroleum industry have increased the demand for The Oil and Gas Journal's large wall maps showing all oil, gasoline and natural gas pipe lines in the United States. As reproduction of these maps, either in whole or part, has been prohibited, they are obtainable only through The Oil and Gas Journal. A limited number of copies, printed on especially heavy bond paper, are still available at $1, including postage.

LYCOMING CONSTRUCTS GATHERING SYSTEM

CORNING, N. Y., Oct. 10.—The Lycoming Natural Gas Co., of Wellsboro, Pa., has started the construction of gathering lines in the Wayne village field to connect the wells of the Tri-State Gas & Electric Co. preparatory to marketing the gas from the field. Lycoming has no line of its own in the field as yet, but has a contract to buy Tri-State Gas & Electric Co.'s gas as well as production from several other companies. Lycoming has rights of way for a line toward Penn Yan, however.

In the meantime, the construction of the Iroquois Gas Co.'s line from Hammondsport toward the Wayne Field was progressing slowly. Several hundred men are employed in the task, all of them experts in pipe line work.

FIVE-YEAR PIPE LINE GRANT

MEXICO, Mo., Oct. 12.—The Mexico city council introduced an ordinance granting a five-year easement to the Missouri Power & Light Co. for a natural gas pipe line to be built through several city streets to the manufacturing plants of the A. P. Green Fire Brick Co.

The council passed an ordinance last week granting an easement "for such time as the city deems it advantageous to the municipal welfare." The power company and the brick company heads objected to this clause and urged the enactment of an ordinance providing for a permanent easement. The council agreed to enact a new ordinance for a five-year term, but Mayor J. F. Jolley, chairman of the council, said: "This is as far as we can go."

CALIFORNIA STANDARD WILL LAY NEW LINE

LOS ANGELES, Calif., Oct. 10.—To avoid the necessity of laying off several hundred men Standard Oil Co. of California has decided to construct an additional pipe line from the Kettleman Hills oil fields to the company's marine terminal at Estero Bay. Estimated cost is $500,000.

Between 200 and 500 men will be employed on the new line throughout the winter months on a 4-day week basis. Confronted with a surplus of man power within its own organization, the directors decided to move the work at once.

NORTH CENTRAL ILLINOIS

CHICAGO, Oct. 12.—The Continental Construction Corp. is acquiring right of way and making other necessary arrangements for construction of the branch pipe line 170 miles long to supply northern Illinois cities and Milwaukee with natural gas from Texas. This branch line will take off from main line at a point near Geneseo, Ill. In addition to Milwaukee, the extension will make gas available for the cities of Rock Falls, Dixon, Oregon, Rockford, Sycamore and Belvidere in north central Illinois.

The main line was completed on August 5 and will begin supplying natural gas to Chicago and its metropolitan area as soon as possible after October 15.

This reproduction of a photomicrograph shows how flakes of the internal reinforcement used by Barrett tend to interlock. They laminate with the waterproofing agent and give Barrett Pipe Line Enamels unusual tensile strength and toughness.

For pipe of large diameter The Barrett Company will furnish equipment required to revolve pipe and spread enamel.

Flake-type internal reinforcement gives protective quality to . . . .

Barrett Specification PIPE LINE ENAMELS

In all Barrett Specification Pipe Line Enamels a flake-type mineral reinforcement is used. Exceptionally high tensile strength and toughness are thus obtained. In addition, the reinforcement material itself is non-absorbent, chemically inert and highly dielectric. By the use of flake-type reinforcement a higher percentage of bitumen (coal-tar pitch) is possible, in every ton of finished enamel. This further enhances the value of Barrett Enamels as protection against corrosion. Complete information on Barrett Anti-Corrosion Products will be sent promptly, upon request.

The Barrett Company

40 Rector Street, New York, N. Y.

Acreage Content Standard of Ownership

Recommended Plan for Operation of Fields Deemed Feasible and Equitable by Engineers. On Chicago Program

By Earl Oliver*

ENGINEERS FEEL PLAN FEASIBLE

With unit operation definitely decided upon as a pertinent subject for consideration and discussion at the annual convention of the American Petroleum Institute in Chicago next month, the series of articles on this subject and stabilizing the industry, written by Mr. Oliver and W. P. Z. German and published recently in The Oil and Gas Journal, are being studied carefully by producers and oil company officials.

Since those articles were published, additional engineers have given their opinions regarding the determination of acreage content of an oil pool. Joseph Jensen, petroleum engineer of the Associated Oil Co., Los Angeles, agrees that "a plan of prospecting and determination might be evolved whereby a reasonably close estimate of the relative quantities of oil and gas underlying adjacent tracts in a common pool might be determined." Many engineers have written Mr. Oliver on this subject and their agreement is so general as to be almost unanimous that acreage content can be determined within reasonable bounds.

Of especial interest to production men will be the general session on production at the A. P I.. meeting on Wednesday, November 11, when the subject, "The New Conception of Oil Production," will be discussed by J. Edgar Pew, John R. Suman and Mr. German.

This paper is based on the formula that the petroleum industry is sick—find the cause, eliminate it, and the industry will get well. There is perhaps no difference of opinion that the cause is overproduction, actual or potential. But that, again, is a result rather than a cause. The problem is to study those influences that serve to keep production and consumption out of balance.

Production control is a popular theme and a natural one at this time when the whole world is unstable; but production control in its popular sense means little more than the application of emergency measures while danger threatens. Economists differ as to the effectiveness of these, most of which are designed to alleviate and not to cure, but we assume there is none who questions the wisdom of promoting conditions under which economic forces are permitted to operate freely in bringing about stable conditions.

The petroleum industry suffers from two classes of economic ills that serve to promote overproduction; namely, those which are common to all industries and those which are peculiar alone to this industry. It is of the latter I wish to speak. Strange to say, government is responsible in a large part for this latter class of ills that affect the petroleum industry and we are coming to recognize that only through the assistance of government can they be corrected.

The Wild Game Decision

Instability of the petroleum industry, in so far as human agency was involved, had its inception back in 1875 when a Pennsylvania jurist, called upon to make a decision for which there was no precedent and fancying he noted some resemblance between the so-called fugitive nature of oil and gas and that of wild game, made mention of that resemblance. Other courts being impressed by the analogy enlarged upon it and gradually fixed upon oil and gas a legal status in certain important respects similar to that of wild game. While the courts later abandoned this analogy yet certain practices that developed out of that early conception have continued to this day and are largely responsible for the industry's present plight. Thus, instead of ownership in place that is characteristic of private property generally, the law of capture was applied to oil and gas.

Now, the rapid and wasteful depletion of game in every country as population becomes dense, until adequate game laws are enacted, is so well known as to need little discussion. We know how fish, deer, bear and buffalo have disappeared except where they were protected. We know their utter annihilation would have occurred except that the government stepped in and laid down minute directions, setting forth the manner, time, and quantity under which the few remaining in each case might be appropriated. It even specified the uses to which the number appropriated might be put. These minute directions of government were sufferable only in that they applied to things not of great importance to the welfare of the citizen. They would, however, not be sufferable if applied to a great industry.

No Protective Laws

As stated, the courts fixed upon oil and gas a legal status somewhat similar to that of wild game; but legislators found themselves unequal to the task of formulating adequate game laws. As a consequence there were applied to the nation's supply of oil and gas the same ruthless methods of capture that characterize the taking of wild game where no game laws exist. There were no rules to determine how much each owner was entitled to extract. The only standard set upon him was that his proportion of the reservoir content should be taken out of the reservoir through wells drilled on his own land; which, again, is contrary to engineering principles for the reason that his land might be so located on the structure as to make extraction at that point exceedingly wasteful. To secure his share each owner was compelled to enter a race involving competitive extraction, bringing that which he could to the surface at once irrespective of market demand. The rate of extraction of the petroleum reserves depended upon the rate of discovery of new pools not upon market demand. For many years pools were not discovered more rapidly than consumption could be speeded up to consume the output; but finally the cumulative result of scientific efforts outstripped consumption and developed a potential that must be curtailed in some other manner than is possible under competitive drainage.

One need be no profound student of political economy to understand that permanence and preservation of the material things of life that we constantly see about us and that are collectively known as property are vitally dependent upon the character of laws under which ownership is determined. If the law of ownership to a material thing is certain, positive and permanent, the individual who owns it will protect it, conserve it, and utilize it to its maximum capacity knowing that in the meantime delay on his part will not deprive him of such enjoyment when and however he may deem most desirable. Such certainty means the most complete and efficient utilization by him, which happily is likewise most beneficial to society generally. On the other hand, if his character of ownership is such that it imposes upon him great burdens to maintain, and finally complete uncertainty as to whether or not he shall enjoy it at all, this uncertainty and burden become a pressure upon him to utilize it immediately and secure what enjoyment may come to him out of it, irrespective as to whether or not that enjoyment is small in comparison with what it might be if he could afford to delay enjoyment. He utilizes it immediately and inefficiently. Unfortunately inefficient utilisation on his part results in a like loss to society in general.

Premium on Wastefulness

The recognition of these principles occurred so long ago their inception is lost in antiquity. We can only theorize that their recognition is the foundation on which the institution known to us as private property is based. Otherwise we find it difficult to explain the sacredness with which that institution is regarded, and its remaining so little changed through the ages. But any theory we may entertain as to its origin is not so conclusive as our daily observation of its operations.

This principle of oil and gas law, conceived in 1875, was, then, an abortive one. It violated centuries of experience as to the type of ownership to property that best serves mankind. It conflicted with economic law. It prevented operation of the law of demand and supply. It put a premium upon wastefulness rather than efficiency. It did not harmonise with existing institutions. It did not utilize the predominating traits of human nature without which no law can be economically successful. However, for a time it persisted. Out of it grew practices, usages and customs of the industry. Finally courts began to recognize its inconsistency and there is now a growing tendency to break away from it.

Changed Attitude of Courts

It is obvious that in many of the early court decisions there was a complete lack of recognition of any factors peculiar to oil pools that are of common and vital interest to all operators in the pool and to the public at large. This is no longer true as it is now clearly recognized by the industry and even implied in a recent court decision that the energy factor is common to all interested parties including the public at large. It is not the purpose of this paper to discuss this aspect of the problem further than to point out that much of our existing oil and gas law is not only obsolete but runs counter to well established engineering principles.

The Supreme Court of Arkansas in Bodcaw Lumber Co. vs. Goode, 254 S.W. 545, stated the present tendency to be: "According to many writers on this subject the view most generally entertained by geologists at present is that gas and oil are not of a vagrant character and do not migrate, but maintain their situs until they are drawn out or expel themselves by pressure through artificial openings in the surface, and that tendency of later decisions is to hold that oil and gas while in place and before being drawn out by artificial openings are as much a part of the realty as fixed minerals such as coal or iron." However the changed attitude of courts has not yet made itself generally felt in the practices of the industry, nor in fact has it been carried to its logical conclusion by the courts themselves. If full force were given to the principle that ownership exists to oil and gas in place it follows courts and legislatures would do those things necessary to protect the owner in a reasonable enjoyment of that which he owns—which of necessity would include protection against their appropriation by others.

Lawyers have advised our committee: "Oil and gas in place are either owned (1) in common, as is held in Oklahoma and certain other states, or (2) belong to the person under whose lands they lie, in harmony with the decisions of Texas and other courts. If they are owned in common, as in Oklahoma, one operator should not be permitted to take more than his reasonable share of the oil and gas from the common pool, or to operate by methods which waste or dissipate the natural forces necessary to produce them thereby preventing the maximum recovery of the common resources. If such minerals are owned in place, as in Texas, each owner has title to the oil and gas under his land and it is apparent that one owner should not be permitted to take that which belongs to his neighbors, or to do that which injures his neighbors' property or prevents his neighbors from recovering the maximum amounts from under their lands."

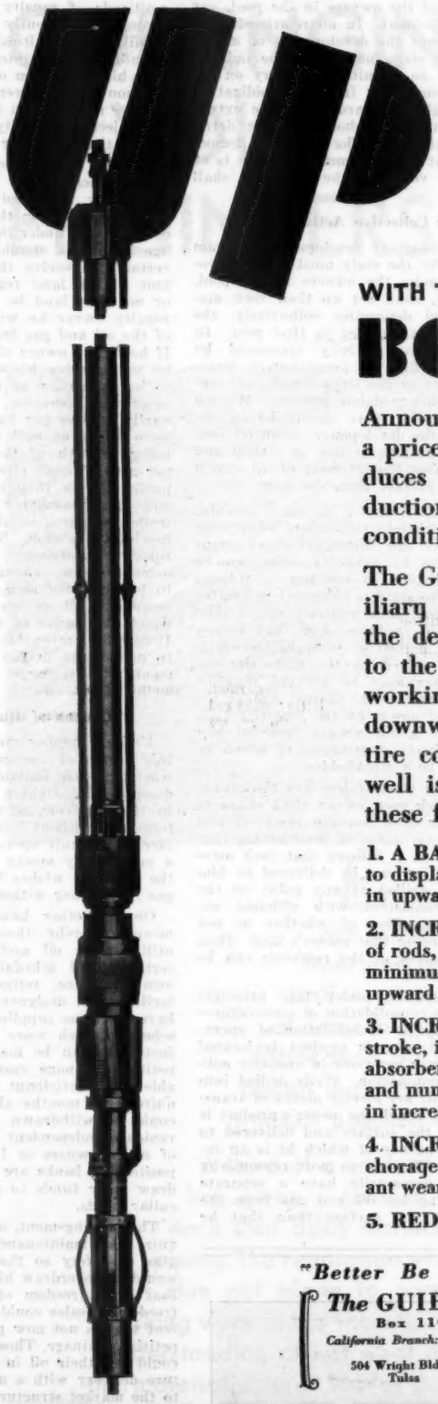
Engineers and Lawyers

The courts of Texas, however, have not yet developed a clear line of action fully protecting the ownership set forth, although the case of Oxford Oil Co. and others vs. Atlantic Oil Producing Co. strongly suggests their readiness to do that if a suitable opportunity develops. Progress in this direction will depend upon the extent to which petroleum engineers devise practical methods of development in harmony with ownership in place. "It is the function of the engineer to outline methods under which oil fields should be developed and of the lawyer to find how that can be legally accomplished."

It is clear that the identical oil and gas in place under the land of any owner would be difficult to determine; but there is a well recognized body of law governing the confusion of goods. The courts do not refuse justice merely because they cannot give each man his particular ear of corn, bale of cotton, or bushel of potatoes. Instead they do those things necessary to give substantial justice—and courts have wide discretion as to what means shall be used to bring about that end. They have no means of determining whether the oil that comes out through "A's" wells was originally located under "A's" land but they do know whether the manner of development followed by "A" is such as a reasonable man would use if he were not also attempting to extract oil and gas from under the land of "B".

Certain practices and usages of the industry growing out of this early Pennsylvania line of decisions remain as an aftergrowth that is difficult to break through. Men have experienced them so long they now claim them as vested rights notwithstanding they are entirely inconsistent with underlying principles regarding the use and enjoyment of property that have persisted for ages, and which are in fact the basic principles on which organized society is founded. These errors die hard. They have been maintained as a continuity of policy. They have been defended by bold and baseless assertions, but they now give promise of becoming the subject of legislative compromise and no doubt they will eventually be swept away and repudiated. Ob-

*Chairman A.I.M.E. Committee on Unit Operation. Address delivered at Houston, Tex., at fall meeting of A.I.M.E. Petroleum Division.



UP GOES OIL WITH THE GUIBERSON BOOSTER PUMP

Announcing the Guiberson Booster Pump is like posting a price raise for crude. The Guiberson Booster Pump reduces the cost of production and also increases that production—at the same time greatly improving pumping conditions through new and exclusive features.

The Guiberson Booster Pump is best described as an auxiliary working barrel, set down approximately one-third the depth of the well. Its function is to transfer and lift to the surface oil that is delivered to it by the regular working barrel, by means of the weight of the rods on the downward stroke. The enormous load from lifting the entire column of oil is thereby relieved. In effect, a deep well is made into a shallow well for pumping. Consider these features:

1. A BALANCED UNIT. By utilizing weight of rods below Booster Pump to displace fluid on downward stroke, rods are always under tension, as in upward stroke. Shock absorbing result makes pump a well-balanced unit.

2. INCREASES LIFE OF RODS. Continuous stretching and contracting of rods, which cause practically all rod troubles, have been reduced to a minimum by keeping rods under constant tension on both downward and upward strokes.

3. INCREASES PRODUCTION. Downward stroke, as well as upward stroke, is made to lift oil. Rod tension on downward stroke acts as shock absorber, avoiding quick load stress at reversal of stroke. Length of stroke and number of strokes per minute may be increased materially, resulting in increased production.

4. INCREASES LIFE OF TUBING. Booster Pump provides tubing anchorage near the center of the string, reducing weaving motion and resultant wear. Constant rod tension also saves wear.

5. REDUCES WEIGHT OF WELL. Fluid is passed to casing above Booster Pump, relieving rods of this fluid weight, which is approximately 1½ pounds per foot in 2½" tubing. Booster Pump, being one-third of the way down, saves approximately 33⅓% in power consumed over the usual method of pumping.

"Better Be Safe Than Sorry"

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GUIBERSON

BETTER BE SAFE THAN SORRY

viously the wisdom of 1875 is become the folly of this generation.

Destruction of Resources

Surely destruction of natural resources like that which took place in the Oklahoma City Pool and which is now taking place in East Texas will not long be permitted now that its extent and influence are becoming so generally realized. Legislators have authority to devise laws under which these products may be extracted efficiently and orderly for the benefit of society and will do so when engineers are in agreement as to methods. In the absence of such laws public sentiment has supported the chief executive in the application of martial law to stop the destruction, but no executive should be forced to use that method.

The oil industry is unstable. It is wasteful. But these admissions should cause it no embarrassment unless, of course, it refuses to help free itself of those characteristics. The practices it employs are the natural consequence of the type of ownership government foisted upon it. The personnel of government responsible for these practices has long passed away and it is but fitting their successors of this day, federal and state, through courts and legislatures should endeavor to remedy the errors of their predecessors. In fact the aftergrowths of these errors cannot be broken through without the co-operation of government and industry.

Authority of State

Lawyers have advised us it is within the constitutional authority of state legislatures to interpret the rule of ownership in harmony with developing scientific knowledge. They assert that the state, under its police power, has the authority to regulate and prescribe methods for the extraction of oil and gas from a common pool on either of two bases: (1) To protect the public interest against waste of the products; (2) to insure a just distribution among the collective owners. They state that if engineers can devise methods of determining the relative acreage content of each landowner in a common pool within reasonable bounds, not at all with mathematical accuracy, then that it would seem to follow clearly from certain court decisions cited by them that the state has the power to substitute acreage content as the standard of each owner's rights in a common pool for the old standard that still persists to some extent in oil field practice that he can extract from a common pool all the oil and gas he can draw out through wells drilled on his own land.

If this acreage content standard is definitely substituted for the old one of unregulated capture, a long step forward will be made toward stabilizing the petroleum industry. Competitive drainage in its virulent form will at once disappear. In proration, methods analogous to those in the Yates Pool will be adopted as contrasted with those now in vogue at Oklahoma City or in East Texas. Acreage potential would be substituted for well potential. This can be accomplished within reasonable bounds through the simple expedient of determining in each pool what is a suitable number of acres to support each well. If any owner desires to drill more he should be permitted to do so upon the condition his allowable production for the acreage unit would be based on the average potential of his several wells. If an owner has less acreage than the recognized unit, his percentage of potential should be reduced accordingly. This would at once remove in a simple manner the economic burden of drilling many wells close together where a few would suffice. It would induce owners of small lots to join with others. It would eliminate the chief objection to proration; namely, that the operating cost per barrel is increased through the low allowable per well. It would put proration on a sound and fair basis.

Unit Operation

While it would thus help to establish proration on a sound basis in those pools where proration is applied, it would also serve as a most effective step toward promoting unit operation in those pools where that method is found desirable. Lawyers have also advised if engineers can evolve practical methods of determining relative acreage content within the standard previously set forth, namely, within reasonable bounds, not with mathematical accuracy, that it seems to follow clearly from certain decisions of the U. S. Supreme Court and several state courts that the state has the power to require unit operation of oil pools where that method would be reasonable and practicable.

Following receipt of that opinion we addressed letters to a considerable number of engineers of recognized standing throughout the land making inquiry whether in their opinion engineers could evolve practical methods of determining relative acreage content within the limits set out in the legal opinion mentioned, and if so by what procedure. With few exceptions replies were in the affirmative, and development steps were indicated by which that determination might be made. Naturally, any such procedure would involve an extensive exploratory program to secure information as to the extent of the pool, thickness, porosity and content of the producing horizon, etc., before commercial exploitation is extensively developed other than to repay cost of the exploratory program. But if that were a vital part of the unitization program advantages coming out of its adoption would more than offset the necessary delay occasioned in testing out the pool to secure information. In fact delay in turning floods of oil on the market after a pool is discovered is not one of the ills that beset the industry.

Several replies contained the suggestion that some means of readjustment at later periods should be provided similar to that of the Van Pool arrangement. The general sentiment of those consulted was fairly well summed up by Joseph E. Pogue, who stated: "I think engineers know how to determine relative acreage content within the limits set forth in the legal opinion; but if they do not already know, then they must learn how to do it."

Acreage Content as Basis

If relative acreage content be established as the legal standard of each owner's right to extract oil and gas from a common pool, and appropriate protection be given each owner in the enjoyment of his right, then one of the greatest obstacles that now exist to the general adoption of unit operation will disappear. The first act of the discoverer of a new pool, or in fact of the owner of any new well would be, not to start a competitive drainage race, but to develop information to determine how much oil and gas he is entitled to withdraw. His greatest incentive to hasty development would be gone. He would proceed with the knowledge that his taking would be limited to a quantity subject to determination and to a certain regard for expulsive forces so that his neighbors' ability to extract might not be lessened; that failure on his part to observe these limitations would subject him to restraining order or damage suit on the part of those injured. He would no more attempt to take the neighbors' share of oil than he now attempts to take the neighbors' share of coal or timber, and for the same reason. His own interest would be best served by joining with that neighbor in determining the quantity and devising methods.

Decisions on matters of common interest should be determined by the collective voice of the owners in the pool, not by the individual. In no relationship in society except the development of an oil pool is the claim made that the individual should be permitted to carry on his business completely free from obligation to his neighbor regardless of the extent to which that neighbor might be detrimentally affected. The spirit of democrary is that where common welfare is at stake the voice of the majority shall control.

Collective Activity

Any satisfactory development program sponsored by the state must include provision whereby the owners in the pool, collectively, shall set up their own machinery and determine, collectively, the policies to be pursued in that pool. In every collective activity sponsored by government, like the formation of drainage districts or the improvement of communities, this principle prevails. We see no reason why there should be an exception in the development of an oil pool where the actions of one so vitally and directly affect the interests of all others entitled to extract from the same pool.

On the other hand if the state provides machinery whereby the owners collectively in any pool can determine development methods and by majority voice require all in that pool to conform, it follows also that the state is obligated to protect from injustice each minority owner thus compelled to conform. For that reason under any method of co-operative development sponsored by the state the minority owner may be assured that he will have protection against unfair assumption of power by the majority to a degree that is not always accorded him by the ordinary corporation of which he chances to be a stockholder.

If acreage content becomes the standard by which each owner shall share in the contents of a common reservoir and a satisfactory means of determining that is found, then it follows that each owners' proportion can be delivered to him from wells drilled at any point on the structure consistent with efficient extraction, regardless of whether or not the wells are on that owner's land. Thus expulsive forces of the reservoir can be efficiently used.

Unit operation under this principle need not be consolidation of ownership—it need only be consolidation of operations. Each owner's product is located in the common reservoir in quantity subject to determination. Wells drilled into that reservoir are merely means of transportation by which the owner's product is brought to the surface and delivered to him by an agency of which he is an integral part. There is no more reason why he should necessarily have a separate well to bring his oil and gas from the reservoir to the surface than that he should have a separate pipe line or railroad to take his product the additional distance to market.

Advantages to Small Owner

Adoption of this principle of acreage content would also simplify the growing problem of dealing with the increasing multitude of royalty owners that comes through the recently adopted practice of subdividing royalties. The owner of a minute royalty interest would merely have his proportion of the content of the common pool delivered to him in like manner as others in that pool and would be subject to majority action to the same degree that all other participants are.

On the other hand the small participant, either royalty owner or operator, will enjoy many advantages from unit operation based on this principle that he cannot enjoy under the competitive drainage system of development. He will be certain to receive the oil and gas content of his land regardless of whether or not that land be drilled. If he be a royalty owner he will receive his share of the oil and gas free from any charge. If he be the owner of a working interest he will receive his oil and gas subject to its proportion of the cost of development and operation, which would ordinarily be less per barrel than if a well were drilled on each small piece. It will bring to both of them a greater yield per acre through effective control of expulsive forces than they are entitled to and may reasonably expect under controlled competitive drainage as it will inevitably develop. No system can continue permanently that permits one owner to secure enough acreage on which to locate a rig and withdraw from the common pool as much oil as that to which the owner of 40 acres is entitled. It would thus enable the small operator to participate in the results of development without large capital expenditure on his part.

Means of Quick Return

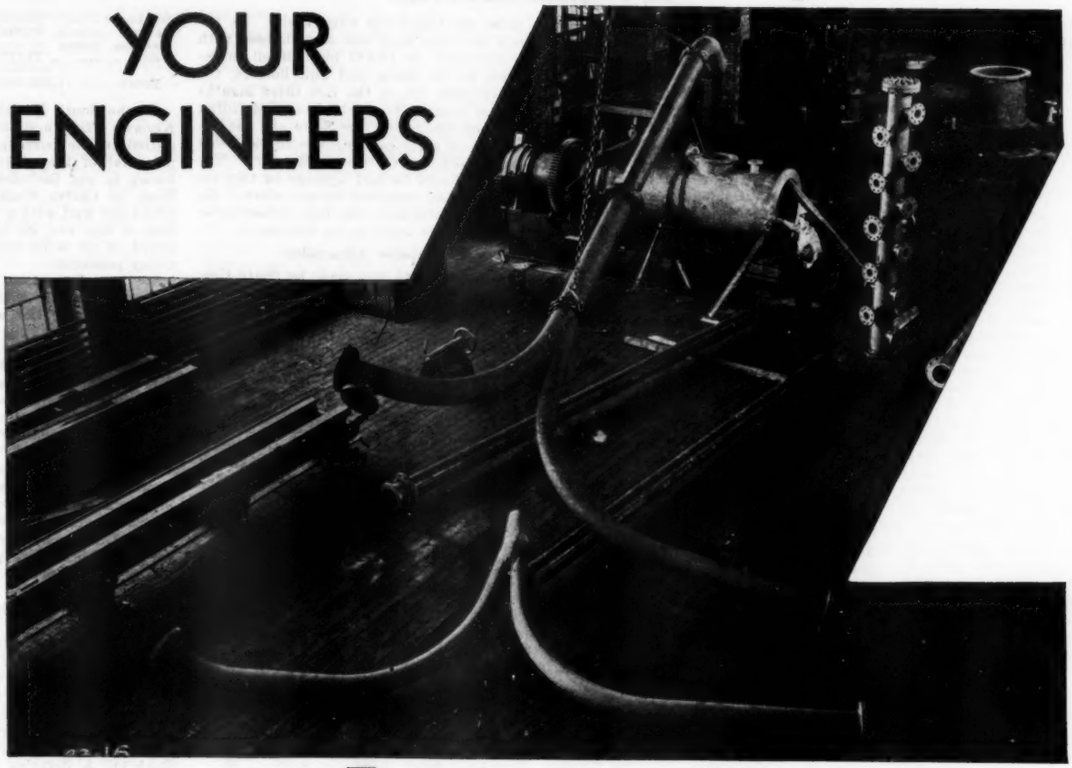
Under a proper system of unit operation forms of assignment will evolve whereby each individual owner readily disposes of his share of the oil and gas in the reservoir, after the same is determined, without bringing it to the surface. Thus unit operation would provide a most ready means of quick return to the one who wishes to turn his oil and gas into money without delay.

On the other hand it would afford means whereby those who wished to utilize their oil and gas according to certain fixed schedules suited to their own pipe line, refinery and marketing facilities to designate their needs and have the same supplied according to that schedule much more readily than adjustments can be made under the competitive drainage system. It would enable each participant to designate his requirements months ahead and the same could be withdrawn to suit his convenience independent of the withdrawal of other owners in like manner as depositors in banks are permitted to withdraw their funds to suit their own peculiar needs.

This arrangement, of course, would require the maintenance of certain margins of safety so that each participant would not overdraw his share, but within that limit freedom of withdrawals and freedom of sales could be made to an extent that is not now possible under competitive drainage. Those in need of money could sell their oil in the ground for future delivery with a minimum of danger to the market structure and on the other hand those who desire reserves of oil and gas could accumulate them with the assurance that they would remain in the reservoir free from deterioration or storage costs until needed. Instead of the transient hysteria that now attends the discovery of a new pool, permanent communities would be built up in which industries would be developed to consume the cheap gas fuel now blown into the air. Labor would be benefited and social conditions improved. All these and many other advantages would accrue from unit operation which would be made comparatively easy if the standard of acreage content were substituted for the present unregulated capture system.

Swabbing wells in the Boryslaw Field, Poland.

OUR ENGINEERS always check YOUR ENGINEERS



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LIMBERT PIPING

New Leasing Campaign on in Oklahoma

Properties Recently Taken Are Bought on Best Geological Advice, Replacing Less Desirable Surrendered Leases

By W. A. Spinney
Staff Correspondent, Oklahoma Fields

After an enforced shutdown of 68 days, the flush and semiflush fields of Oklahoma were reopened on Saturday, October 10, at 7 a.m., by order of Cicero I. Murray, acting for Gov. William H. Murray, and on the first day the Oklahoma City Field produced 368,068 bbls. from 130 wells. The order reopening the fields will be effective until 7 a.m. October 20. With the reopening of the prorated fields a large increase is expected in the State's daily average for the week ending October 17. The daily average for the week ending at 7 a.m. on October 10 was approximately 251,000 bbls. a day, which is a decline of 22,000 bbls. a day from the previous week. This decline is due to the strict curtailment of all production ordered by Col. Cicero I. Murray affecting all the shutdown fields, in the order of October 1.

The Oklahoma City Field started producing October 10, after being shut in since August 4, and the wells started with approximately the same pressure and potential production they showed before they were shut in. It is believed after careful checking of the pressures that the inactivity has not materially affected the wells and the output on the first day indicates that production is almost on a level with that of last August.

It is still too early to definitely determine the volume and pressure the wells will show. Some express the opinion that the lime wells in the Oklahoma City Field may show some loss as to pressure and volume. Only one or two of these wells were on production Saturday. Within the next few days the lime wells, all of which were making some water when the field was shut in, will be tested.

Some are of the opinion that the shutdown has equalized the pressure in the closely drilled areas in the northwestern part of the field, in Sections 2-3 and 10-11-3w. During the shutdown several wells in the above area have been opened for a short time to relieve the huge gas pressure. On October 6 the Rajah Oil Co.'s No. 1 Davis was opened by permission of the military officials to relieve the pressure and made 7,037 bbls. of oil. The Capitol Producing & Drilling Co.'s No. 1 Jones flowed 1,650 bbls. of oil in 43 minutes while being tested and it started to cut the connections and was shut in.

Last Week's Low Production

The week ending October 10 was one of the quietest in the Oklahoma City Field since it was discovered. No new wells were completed and no initial tests were taken on any well nor were operators allowed to take potential tests on any wells.

The total production of the field for the week ending October 10 was 13,476 bbls. an average of 1,925 bbls. daily. The pipe line shipments for the field totaled 100,345 bbls., an average of 14,335 bbls. daily.

During the next 10 days wells will be allowed to be completed only on a permit of the commanding officer, Col. Cicero I. Murray. There were two wells which are being delayed until such a permit is issued. They are Wilcox Oil & Gas Co.'s No. 1 Laue, NW cor. NE NW NW Section 10-11-3w, which is bottomed at 6,551 feet in the Wilcox sand. The top of the sand was 6,335 feet and all connections have been made. The other well is the Spring Rose Drilling Co.'s No. 1 Henry, SE cor. NW Section 2-11-3w, which had the Wilcox sand at 6,250-6,357 feet. All connections have been made to complete the well.

Governor Murray returned to the State during the week and after conference with Cicero I. Murray, his oil representative and in charge of the shut down of the state fields, started to investigate the oil situation. Several committees visited with the governor but no definite action was announced.

Russell Suit Withdrawn

An injunction suit filed by Frank Russell of the Russell Petroleum Co. in which it was charged that the governor, Col. C. I. Murray, and Adjutant General Barrett, had violated both the state and federal constitution in ordering out the militia and shutting down the oil fields was withdrawn.

A petition is being prepared by the Oklahoma City operators which will be presented to the Oklahoma Corporation Commission asking that a hearing be held to fix the allowable of the prorated fields in the State and to rule on the 3,711,198 bbls. of underproduced oil which is due to different operators with production in the Oklahoma City Field. For the time being the daily production will only be taken from those wells even with their allowables. Overproduced wells will remain shut in to make up the amount of overproduction.

Suits and Threats

During the week a new district court suit was filed claiming fraud against a firm in the Oklahoma City Field in the payment of the gross production tax. The governor also threatened to use the State's military power to enter the refining and retail gasoline business. Oils, Inc., were defendants in a district court suit charging failure to pay royalty on 549,152 bbls. of oil alleged to have been produced from the Oklahoma City Field. In the suit the same firm was also charged with a difference of 10,485 bbls. of oil in reports to the State and unit holders, for oil shipped out in the last three months of last year. The establishment of filling stations throughout the State and the operation of state controlled refineries, was threatened by Governor Murray. The governor said he had options on two refineries and expected to get more. He declined to identify the two refineries or to state their capacity or location.

October Allowables

Announcement was made by State Umpire Ray M. Collins that the allowed production for the period from October 10 to 20 of all the prorated areas except Oklahoma City will be 151,604 bbls. a day based on a potential of 535,680 bbls. Operators having wells included under Class "A" with a 20-bbl. exemption clause are allowed to produce the same amount as before martial law became effective. All adjustments on allowed production due to overages and shortages will be made at a later date. The pools included in the summary are shown below:

Pool—	October potential	Daily allowable	Pct. allowed
Allen	18,888	8,499	45
Asher	29,396	6,480	22
Bowlegs	25,802	11,618	45
Carr City (settled)	5,923	2,666	45
Carr City (flush)	37,628	8,466	22.5
West Chandler	41,666	1,396	3.35
Earlsboro	26,334	11,852	45
South Earlsboro	13,912	3,318	22.5
Earlsboro ext.	570	128	22.5
East Earlsboro	25,050	11,273	45
Earlsboro Townsite	4,647	2,091	45
Konawa	22,636	6,201	22.5
Little River	42,804	19,267	45
East Little River	9,596	4,317	45
Maud	3,693	1,667	45
Mission	15,243	6,862	45
Sasakwa	3,385	1,524	45
Searight	7,116	3,201	45
Seminole	23,776	10,701	45
East Seminole	2,498	1,126	45
West Seminole	9,046	2,687	29.7
St. Louis	33,802	15,212	45
Tatums	57,038	5,642	..
Wewoka Townsite	75,237	5,400	7.17
Total	535,680	151,604	

In the South Earlsboro, Earlsboro and Konawa Pools, a sliding scale will be permitted in the percentages allowed. The potential of the stripper and Class "A" leases is not included. In the Tatums Pool, in Carter County, 45 bbls. is allowed per well with a potential under 400 bbls. a day and 90 bbls. per well is allowed on all wells making over 400 bbls. a day potential.

Important Wildcat

An important wildcat test was announced during the week by Mid-Continent Petroleum Corp. in the SE cor. SW NW, Section 2-6-4, Pottawatomie County. The test was located after a intensive survey with seismographs. The location is south of the St. Louis Field and north of the Asher Pool.

Withdrawals From Storage

During the week ending October 1, withdrawals from storage in the Greater Seminole-Cromwell areas totaled approximately 225,000 bbls. which was a slight increase over the previous week. It is believed the majority of the crude oil went into interstate pipe lines, while in a few instances the oil was moved to state refineries. The Texas-Empire Pipe Line Co. was receiving the majority of the oil.

The Texas Company ran a total of 4,180 bbls. daily from storage in Sections 3-8-6 and 8-9-5, in the Seminole area. Stanolind Pipe Line Co. ran 8,550 bbls. daily from storage on Section 5-7-5. The Gulf Pipe Line Co. ran 295 bbls. of oil from its Cromwell storage daily. Deep Rock Oil & Refining Co. ran 1,100 bbls. of oil daily from storage in the Cromwell area the crude oil going to its refinery at Cushing. The White Oak Oil Corp. completed running crude oil from storage in Section 7-9-6, to its refinery at Allen, the daily average shipments having been approximately 400 bbls. Pure Pipe Line Co. ran an average of 4,000 bbls. from storage from the tank farm at Section 28-9-6. The total pipe line shipments from the Greater Seminole area were 57,880 bbls. daily. Of this amount the 40,973 bbls. was from the Seminole area, 14,977 bbls. was from the Asher, St. Louis, and Pearson areas, and 1,930 bbls. was from the Konawa area.

The Magnolia Pipe Line Co. was the only company reporting any sizeable runs to storage in the Greater Seminole area during the same week. The total runs to storage were 1,420 bbls. of crude oil daily to tanks in Section 21-8-5.

From the reports on production from the Greater Seminole area for the week ending October 6, a decline of approximately 12,000 bbls. was indicated. It is believed that most of the leases did not exceed their allowable after being warned by Cicero I. Murray, in charge of the shut down in the State. It was also indicated that all violators of the military law regarding the shut down would be forced to shut down their leases. Some express the opinion that the Carr City operators that were shut down October 1 may be permitted to resume producing their wells within a few days.

The West Chandler district of Lincoln County, which was also shut down by military order had a daily average of 450 bbls. from 25 wells for the same week. Only 11 wells in the field are affected by the order.

Deepest Test in State

The State's deepest test, Mid-Kansas Oil & Gas Co. and Ramsey Petroleum Co.'s No. 6 Preston-Culp, NW cor. NE

(Continued on Page 75)

WILDCAT OPERATIONS IN OKLAHOMA

NORTHERN OKLAHOMA

ALFALFA COUNTY

Company, farm and location— Remarks:

Smith Brothers' No. 1 Forbes, SE cor. NW NW, Sec. 12-27-11w ..... Shut down 1,232 ft.
J. W. Bailey's No. 1 Acra, SW cor. NE, Sec. 14-24-11w ... Shut down 5,502 ft.

ATOKA COUNTY

Campbell's No. 1 Baird, NW NE SW, Sec. 31-1-13 ..... Rig.
Edgerton Edwards' No. 2 Rowland, SE NE NW, Sec. 6-1-15 ..... Rig.

BECKHAM COUNTY

Price-McFann's No. 1 Webster, C SW SW, Sec. 34-8-26w .. T. D. 2,344 ft.; plugged back to 1,890-1,900 ft.; 1,500,000 ft. gas.
Mid-Continent's No. 1 Schaff, C NE SW, Sec. 22-11-22w .. Waiting on cement to set 430 ft.
Mid-Texas Co.'s No. 1 Sidell, NE cor. SW SW, Sec. 17-2-22w ..... Shut down 2,550 ft.
White et al's No. 1 Green, SW cor., Sec. 34-10-24w .... Shut down 3,575 ft.

BLAINE COUNTY

Washoma Oil Co. et al's No. 1 Phillips, C NW SW, Sec. 13-19-10w ..... Shut down 5,115 ft.

CADDO COUNTY

Abernathy & Brown's No. 2 Houston, Sec. 24-6-13w ..... Shut down 1,115 ft.
La Piere et al's No. 1 Woods, C SE SE Sec. 27-17-21 ..... Drlg. 1,008 ft.

COAL COUNTY

Radial Oil Co.'s No. 1 McCraw, NE NW, Sec. 2-1s-8 ..... Drlg. 785 ft.
McCraw Oil Co.'s No. 1 Ward, NE SE, Sec. 35-1-8 ..... Drlg. plug; showing 2,000,000 ft. gas 1,765-1,846 ft.; mudded off gas; shut down.
Whitney et al's No. 1 Miller, SE NE, Sec. 10-2-8 ..... Shut down 760 ft.

COMANCHE COUNTY

G. W. Stogner's No. 1 Doebel, C SW SW, Sec. 3-3-9w .... Shut down 1,450 ft.

LE FLORE COUNTY

H. E. Dowd et al's No. 1 Unknown, SE NE, Sec. 17-3-22 .. Fishing 1,112 ft.

GARFIELD COUNTY

E. L. Love et al's No. 1 White, SE cor. NW, Sec. 9-24-6w .. Shut down 5,850 ft.

GARVIN COUNTY

Malarnee et al's No. 1 Phillips, NE SW SE, Sec. 24-2-2w .. Shut down 4,830 ft.

GREER COUNTY

Dovell et al's No. 1 Capell, NW cor., Sec. 1-7-22w ..... 5,000,000 ft. gas 1,455-65 ft.; T. D. 1,760 ft.
French's No. 1 Murphy, SW NW, Sec. 23-7-21w ..... Shut down 1,645 ft.

HARPER COUNTY

Sinclair Oil & Gas Co.'s No. 1 Howell, C SW SW, Sec. 14-26-24w ..... 20,000,000 ft. gas 5,350-5,400 ft.; T. D. 8,539 ft.; shut down; sprayed 50 bbls. gasoline.

HASKELL COUNTY

Ault et al's No. 1 Harrison, CWL SE NE, Sec. 14-9-19 ... Shut down 650 ft.
Ault et al's No. 1 Hall, NW SW SW, Sec. 14-9-19 ..... Shut down 2,000 ft.

Interest Revived in Kansas Field Work

Twelve New Locations Made in Past Week in Six Counties. Southwestern Gas Area Due for Further Exploration

By W. A. Spinney
Staff Correspondent, Kansas Fields

A slight increase was reported in the crude oil production of Kansas for the week ending October 10, when the daily average was approximately 107,410 bbls., compared to 107,210 bbls. the previous week.

Another big well was completed in the Ritz-Canton Field in McPherson County. C. B. Davis and H. K. Beardmore's No. 2 Ritz, NW cor. SE SW, Section 19-19-1w, was estimated at 2,000 bbls. the first 24 hours after a shot in the Viola lime at 3,419-36 feet. The well first flowed 35 bbls. per hour.

Drilling activities increased in the State in the week ending October 7 when the announcement was made that locations had been made for 12 new tests. The counties where the new work was started include Greenwood, Cowley and McPherson Counties, each with three locations, and Ellsworth, Rush and Harvey Counties with one each.

The Kansas Public Service Commission is attempting to gather statistics on the oil situation of Kansas, and has decided to issue an order requiring pipe line companies, crude oil purchasing companies and producers to supply the desired data. Representatives of 30 producing and pipe line purchasing companies in a meeting held in Wichita, October 9, decided on a plan to provide for the gathering of accurate monthly production figures on the State of Kansas in order to facilitate the work of the commission in its proration orders.

McPherson County with the largest flush field in the State, is being curtailed to approximately 30,750 bbls. of oil a day from 200 wells, an average of 153 bbls. per well. The rated potential of the area is 100,000 bbls. a day. Several of the wells in the area are credited with a potential ranging from 5,000 to 6,000 bbls. a day. The Voshell Pool, with approximately 100 wells, is producing an average of 134 bbls. per well. The Ritz-Canton Field, which also has 100 completed wells, is averaging approximately 202 bbls. per well. McPherson County has 24 drilling tests and five classified as rigs or rigging up. Seven tests are shut down, and 14 locations have been made. It is the most active county in the State.

Wants Production Doubled

During the week the Abilene Oil Co. filed a petition with the Kansas Public Service Commission asking that the output of the Ritz-Canton area be doubled. The company has production in the field and says it has an outlet for increased production. The field is now permitted to produce only 15 per cent of its potential production.

Several tests are nearing completion in the Ritz-Canton area which are expected to increase the potential. The Abilene Oil Co.'s No. 3 Anderson, SW cor. NW, Section 36-19-2w, found the top of the chat at 2,916 feet and is preparing to complete the test in a few days. Lario Oil & Gas Co.'s No. 1 Lewis, NW cor., Section 36-19-2w, had a showing of gas in the chat at 2,912 feet. It was drilling at 2,980 feet on the last report. Derby Oil Co.'s No. 4 Domsch, NW cor., Section 6-20-1w, in the south end of the Ritz-Canton Field, was drilling at 3,150 feet on the last report. E. B. Shawver and others' No. 1 Lively, in the NW Section 21-19-1w, on the east edge of the field, was drilling at 2,550 feet.

Schurr Pool Potential

Floyd E. Lockhart, chairman of the operators committee of the Schurr Pool near Raymond, in Rice County, announced that the actual potential of each well in the pool would be taken October 15, by pumping the wells after almost a year's shut down. The estimated potential of the 11 completed wells in the field was placed at 15,000 bbls. a day by the owners of the wells. The Kansas Public Service Commission permitted the wells to open and produce October 1, at the rate of 100 bbls. per well a day. Some believe the estimated potential of the pool is considerable less than that amount. On November 1, the pool will increase its output to 15 per cent of its actual potential.

The first potential tests in the Schurr Pool will be taken by pumping the wells 24 hours through 2½-inch tubing on a 54-inch stroke. Producing wells on the same lease with those being tested are to be shut in during the testing period. Limited market outlet and storage facilities make it necessary to produce only one-third of the wells at one time. On November 1, the production from the pool will be limited to 15 per cent of the potential.

Notice of the taking of potentials sent out by Chairman Lockhart, were as follows: "In connection with the Schurr Pool proration, the Public Service Commission has appointed L. R. Pickrell to act as umpire and agent for the commission. L. R. Pickrell will keep a record of the daily production and pipe line shipments and render a detailed report of the standings of all leases soon after the end of each proration period. The field representatives will advise the operators of their standings from time to time.

"As stated in the order new potentials will start October 15. In line with the voluntary agreements entered into by the producers soon after the area was discovered, the following regulations will be carried out in taking the potential tests: Potential production tests shall be taken on the pump for a period of 24 hours and no allowance will be made for down time. Tests shall be taken through not to exceed 2½-inch tubing, using not to exceed 2½-inch working barrel, and using not to exceed a 54-inch stroke. Operators shall notify all owners of offset wells when testing, and all gauges shall be witnessed by at least one representative of the umpire. Wells not taking potential tests on the same lease on which wells are testing shall be shut in by the umpire during the entire period. On October 15, the following wells will take potentials: Phillips Petroleum Co.'s No. 1 Mezger, Producers & Refiners Corp.'s No. 1 Thompson, Slick, Pryor and Lockhart's No. 1 Schurr, Vickers Petroleum Co.'s No. 1 Binger. On October 16, Producers & Refiners Corp.'s No. 2 Thompson, Slick, Pryor and Lockhart's No. 2 Schurr, The Texas Company's No. 1 West. On October 17, Phillips Petroleum Co.'s No. 2 Mezger, Slick, Pryor and Lockhart's No. 1 Mezger, Vickers Petroleum Co.'s Nos. 2 and 3 Binger.

Ritz-Canton Potentials

Umpire L. R. Pickrell, of the Ritz-Canton Pool in McPherson County, announces that the production of that field will be 15 per cent of the potential production. The potential tests shown below are the actual pumping tests of the Viola lime wells, and the potentials as figured on the 15 per cent per month decline curve for the chat wells.

In accordance with the operators' committee's recommendation, all shortages of October 1 are canceled, but all overages will be equalized during the current month. Hereafter, all shortages will be canceled at the end of each period and operators will be allowed to make up only one day's allowable production in the next period.

The next potential tests on all Viola lime wells will be taken November 1, beginning at 7 a.m. and ending not later than 7 a.m. November 7. The umpire states that several complaints have been received regarding the potentials allowed on chat producing wells in the field by the use of the decline curve and it is likely that some changes will be made in this plan during the month. Operators having any objections regarding the plan are requested to file them with the umpire as soon as possible in order that complete information will be available in event of a hearing on this matter. The actual potential tests of the wells as of October 1 were as follows:

Company and well—	Bbls.
Abilene, No. 1 Anderson	546
Abilene, No. 2 Anderson	977
Abilene, No. 1 Garrett	400
Abilene, No. 2 Garrett	900
Abilene, No. 1 Hindmarsh	500
Barnsdall, No. 1 Aelmore	50
Carey, No. 1 Smith	50
Derby, No. 1 Domsch	878
Derby, No. 1 Sellers	1,200
Derby, No. 1 Unruh	1,000
Dickey, No. 1 Decker	4,107
Dickey, No. 1 Williams	50
Dieter & Youker, No. 1 Lagree	300
Dieter & Youker, No. 1 Sellers	666
Dieter & Youker, No. 2 Sellers	1,216
General, No. 1 Severtson	50
Helmerich & Payne, No. 2 Koehn	50
Jones, No. 1 Flook	1,037
Jones, No. 1 Holmes	50
Lario, No. 1 Becker	1,343
Lario, No. 1 Boals	1,200
Lario, No. 1 Lacquement	1,395
Lario, No. 1 Lagree	1,336
Lario, No. 2 Lagree	1,355
Lario, No. 1 Miller	750
Lario, No. 2 Miller	1,370
Lario, No. 3 Miller	502
Lario, No. 4 Miller	939
Lario, No. 1 B. Miller	1,252
Lario, No. 1 L. L. Miller	1,315
Lario, No. 1 Ritz	317
Lario, No. 1 A. Ritz	680
Lario, No. 1 Sellers	1,200
Lario, No. 1 Suffield	1,040
Lario, No. 2 Suffield	1,122
Lario, No. 3 Suffield	1,192
Lario, No. 1 Wiggers	1,212
Lario, No. 2 Wiggers	1,318
Lassen, No. 1 Hale	1,150
McBride, No. 1 Gustafson	391
McBride, No. 1 Whitright	1,206
McBride, No. 2 Whitright	1,650
McPherson, No. 1 Lindberg	50
McPherson, No. 1 Robinson	50
McPherson, No. 1 Salthouse	50
Marileen, No. 1 Munn	552
Marileen, No. 2 Munn	613
Mid-Kansas, No. 1 Garrett	1,243
Mid-Kansas, No. 1 Pitts	50
Mid-Kansas, No. 1 Unruh	1,174
Mid-Kansas, No. 1 Whitright	719
Olson, No. 1 Johnson	1,375
Olson, No. 2 Johnson	1,465
Olson, No. 1 Koehn	182
Olson, No. 2 Koehn	1,209
Olson, No. 3 Koehn	1,152
Palmer, No. 1 Ritz	680
Palmer, No. 2 Ritz	488
Palmer, No. 1 A. Winn	1,072
Palmer, No. 2 A. Winn	1,582
Palmer, No. 1 B. H. Winn	2,556
Phillips, No. 1 E. Grattan	300
Phillips, No. 1 Grattan	598
Phillips, No. 1 Wiles	977
Plains, No. 1 P. J. Unruh	956
Plains, No. 1 P. J. Unruh "B"	1,156
Reserve, No. 1 J. M. Ritz	681
Reserve, No. 1 O. A. Ritz	984
Reynolds-Unruh, No. 1 Koehn	365
Rosenthal, No. 1 Knudson	50
Rosenthal-Beardmore, No. 1 Ritz	764
Rosenthal-Beardmore, No. 2 Ritz	1,000
Shawver, No. 1 Decker	3,000
Shell, No. 1 Anderson	149
Shell, No. 2 Giffin	550
Shell, No. 1 Lewis	1,195
Shell, No. 1 Miller	262
Shell, No. 1 Ritz	50
Shell, No. 2 Ritz	50
Shell, No. 3 Ritz	177
Shell, No. 2 Salthouse	50
Stanolind, No. 1 and 3 Flook	891
Stanolind, No. 2 Flook	431
Stanolind, No. 4 Flook	6,413
Stearns-Streeter, No. 1 Blair	50
Stearns-Streeter, No. 1 Chindberg	608
Syndicate, No. 1 Becker	699
Syndicate, No. 2 Becker	800
Texas, No. 1 Munn	149
Texas, No. 2 Munn	347
Texas, No. 3 Munn	1,124
Texas, No. 4 and 5 Munn	1,944
United-Boyle, No. 1 Smith	941
Wakefield, No. 1 Koehn	952
Washoma, No. 1 Mecks	1,051
Wolf Creek, No. 1 Krehbiel	50
Wolf Creek, No. 1 Dunsford	50
Youker, No. 1 Grattan	50
Total	85,388

Interesting Wildcat Areas

The most interesting wildcat areas in Kansas at this time are Haskell and Ellsworth Counties, which are active as the result of recent discoveries. With the differences in proration allowables practically over in the State the operators are turning their attention to the southwestern counties, where a gas well 25 miles from production was found and to Ells-

(Continued on Page 77)

WILDCAT OPERATIONS IN KANSAS

(Descriptions are East unless marked otherwise)

BARTON COUNTY

Company, farm and location— Remarks:

Syndicate Oil Co.'s No. 1 Boertz, NW SE SE, Sec. 13-18-12w ..... Shut down 2,440 ft.
Skelton Oil Co.'s No. 1 Ott, C SE SE, Sec. 16-19-14w ..... Drlg. 2,800 ft.
McCool et al's No. 1 Tsern, NW SE NE Sec. 12-20-11w .. Drlg. 2,900 ft.

CHASE COUNTY

Borden et al's No. 1 Atkinson, NW SE Sec. 18-18-7 ..... Rig on ground.

CLAY COUNTY

Crystal Oil et al's No. 1 Tivier, SW cor., Sec. 19-8-2 ..... Shut down 2,700 ft.

COFFEY COUNTY

Heyburg's No. 1 Kroft, SE SW SE, Sec. 30-22-14 ..... Shut down 1,545 ft.

COWLEY COUNTY

Slocum et al's No. 1 Union National Bank, C SW SW, Sec. 16-35-4 ..... Drlg. 1,387 ft.

DICKINSON COUNTY

Severs et al's No. 1 Lavengood, NE SW, Sec. 13-13-2 ..... Shut down 4,170 ft.

ELLIS COUNTY

Gypsy Oil Co.'s No. 1 Weiland, SE cor. Sec. 36-12-16w .. Drlg. 3,022 ft.

ELLSWORTH COUNTY

Keyes Bros.' No. 1 Gregory, SW cor., Sec. 23-16-9w ..... Drlg. 3,200 ft.
Alyward et al's No. 1 Stratman, SE NW SE, Sec. 1-17-10w ..... Silicious 3,355-71 ft.; 117 bbls. 2 hrs.; shut in; est. 2,000 bbls.; no pipe line connections.
Aladdin Pet.'s No. 1 Stoddenberg, C SW, Sec. 22-16-10w .. Silicious lime 3,332-47 ft.; est. 1,500 bbls. a day; shut in.
Milton et al's No. 1 Kester, SE NE, Sec. 6-14-9w ..... Shut down 3,676 ft.; Conglomerate 3,214-50 ft.; hole full water; T. D. 3,710 ft., abnd.

FINNEY COUNTY

National Ref. Co.'s No. 1 Wells, C SW, Sec. 13-23-30w .. Drlg. 1,105 ft.

FORD COUNTY

Carter Oil Co.'s No. 1 Everett, C NE, Sec. 22-29-21w .... Fishing 6,088 ft.

GRAHAM COUNTY

Schleimeyer et al's No. 1 Clark, SW NE NE, Sec. 11-9-25w ..... Shut down 4,648 ft.

HASKELL COUNTY

Tree Oil Co.'s No. 1 Warner, C SE, Sec. 29-30-34w ..... Sand 2,433-2,608 ft.; 14,000,000 ft. gas comp.

HARVEY COUNTY

Liggett et al's No. 1 Davis, SW SE NE, Sec. 7-24-1 ..... Shut down 1,400 ft.
J. P. Flannigan's No. 1 Sheridan, C SW, Sec. 32-22-1 .... Drlg. 3,440 ft.

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Week's One Well Is in Jackson Field

J. E. Grandstaff and Others' No. 1 Buford on Pearl River Completed as Gasser With Estimated Flow of 35,000,000 Feet

By J. R. Crumpton
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Oct. 12.—The Jackson Field in Mississippi reported the only successful completion in this division in the last week. J. E. Grandstaff and others' No. 1 Buford added another good gasser to the Rankin County area with an estimated initial flow of 35,000,000 feet from 2,454 feet. The latest producer is in the southwest corner of Section 11-5n-1e, on the east bank of Pearl River, which separates Rankin and Hinds Counties. At this point the stream makes a sharp turn, flowing north and east for almost half a mile before turning west over into Section 10 and thence south again. Surrounding these sharp turns in direction, as the river traverses Sections 12, 11 and 10, are located a majority of the best wells in this prolific gas field.

Although four dry holes were reported, only one of them had had any indications of being a success. W. P. Wallace, trustee, has given up hope of making a gas well of his No. 2 Cunningham-O'Conner, Section 15-17-14. The test, in the southwestern outskirts of the city of Shreveport, had been watched closely for several weeks owing to a previous offset test having made some gas before salt water intruded in the Nacatoch formation around 1,000 feet. The present well tested dry with a small show of gas from the Blossom sand at 2,047 feet, and another drill-stem test in sandy shale at 2,668 feet resulted in a dry showing with no gas. Six-inch casing then was pulled from 2,042 feet, the hole bridged and reset at 960 feet above the Nacatoch sand. After testing salt water at 1,000 feet, the well was abandoned.

Two Failures in Harrison County

Harrison County, East Texas, reported two failures, Gholson and others' No. 1 Bivens Farm Co., Thomas Toby Survey, was dry and abandoned at 3,085 feet. The other failure in this county did not get a fair test to where pay should be encountered, Thomas & Kinsey abandoning their No. 1 J. R. Watson, Thomas Iden Survey, at 1,672 feet. This wildcat is in the eastern city limits of Marshall, and a few weeks ago reports were circulated that the business interest of that city would finance the well for a Trinity test. In Bossier Parish, North Louisiana. Rombaugh and others abandoned their No. 1 Allison, Section 10-19-13, at 1,600 feet. This test has been shut down since February of this year.

The United Gas Public Service Co. is progressing rapidly on three Trinity tests in as many proven gas fields. In the Rhodessa Field, northwest Caddo Parish, its No. 1 Bussa, Section 33-23-16, is drilling in hard lime at 3,191 feet, and in the Sugar Creek area of Claiborne Parish, 9-inch casing has been set in anhydrites at 4,225 feet in its No. 1 Treadwell & Hawks, Section 6-19-5w. Plug will be drilled within the next few days and bailing started in this well, which if successful will be the sixth producer from this horizon in the Sugar Creek Field. The same company, which operates as the United Production Co. in Texas, has encountered a good gas show at 3,665 feet in its No. 11 Werner, D. B. Lewis Sruvey, in the Bethany Field, northeastern Panola County. The well is trying to blow out from this depth and arrangements are being made to test. The drill bit is in the Glenn Rose formation in lime and it is possible that the gas is coming from sandy shale which preceded the lime on the log. There are several gas-producing horizons in the Bethany Field from around 1,000 feet to the Trinity at the 4,700-foot level, but the closest producing stratum to the depth of the present test is around 3,500 feet.

No Extensive Drilling

There is no extensive drilling in these proven Trinity gas fields because of lack of market demand at present for the large quantity of natural gasoline extracted or the dry gas obtained after separation. The shallowest Trinity producing gas field of the four in North Louisiana and East Texas is 2 miles south of the Bellevue Field, Bossier Parish, where the pay comes from Oolitic lime around the 1,800-foot level. Sugar Creek produces from 4,200 to 4,300 feet; Rhodessa from 5,500 feet and Bethany from 4,700 feet. The gas obtained from the above horizons in the different fields is highly saturated with gasoline, ranging from 500 to 2,000 gallons per million feet.

There is a tendency to give the west side of the Zwolle Field a play since the latest extension in Section 1-7-13 has been producing so consistently. Many operators assert that this part of the field eventually will connect with the Blue Lake area, to the southwest, which was the original producing field in this vicinity. This is believed an extremely optimistic hope in view of the results obtained within the proven boundaries of the Zwolle Field proper and wildcat territory surrounding it. It is entirely possible that producers may materialize that will form a connecting link between the two fields, but as in the proven area, many dry holes will probably result where the producing crevice in the chalk rock is missed.

First of Series of Tests

The first of a series of tests in this particular strip will be W. M. Coates' No. 1-A Bowman-Hicks, Section 18-7-13, which is rigging up. Other wildcats to the northwest seem to indicate that there may be separate producing domes in that direction, not from chalk rock, as in Zwolle, but from an oil-bearing sand like Pleasant Hill in the northern part of the parish. R. L. Gay's No. 1-A Long-Bell Lumber Co., Section 10-8-13, a wildcat about 6 miles northwest of Zwolle townsite production, has had good showings of both oil and gas from 3,200 feet to the present depth of 3,673 feet. A drill stem test of this well from 3,585-3,638 feet developed four joints of high-grade oil, but salt water appeared and the hole was deepened.

About 5 miles northwest of the Gay test, J. J. Keen, trustee's, No. 1 Belton, Section 31-9-13, had a good show of oil, reporting 6 feet of sand, from 1,599-1,605 feet. Eight-inch casing was set at 1,590 feet, but the well tested dry. A good show of oil resulted from a test a few days ago in this wildcat from 1,713 feet, but the hole is being deepened with the expectancy of encountering a thicker strata of sand.

The Langbridge Oil Co.'s No. 1 Stephens, Section 17-9-11, northeast of these two wildcats between the Pleasant Hill and Zwolle Fields, is drilling plug to test after setting 6-inch casing at 3,176 feet. This test is already labeled as a small producer, the pay coming from 3 feet of sand from 3,366-69 feet. The objective of operators in Sabine Parish is to find an oil-bearing sand that produces more consistently than the chalk rock horizon of Zwolle.

Daily Average Runs

There was a decrease of 945 bbls. daily in the average runs from the fields of North Louisiana and Arkansas during the past week, the former declining 810 bbls. while Arkansas just about held its own with a net decrease of 135 bbls. The daily average runs from the several pools were:

North Louisiana	
Caddo light	6,005
Caddo heavy	1,140
Cotton Valley	375
De Soto and Red River	2,200
Elm Grove	360
Haynesville	4,710
Holly	400
Homer	2,700
Pleasant Hill	350
Sarepta-Carterville	880
Urania	3,260
Zwolle	5,915
Total North Louisiana	28,375
Total previous week	29,185
Decrease	810
Arkansas	
Champagnolle	2,000
El Dorado	3,080
Lisbon	575
Nevada	1,140
Smackover light	3,140
Smackover heavy	26,490
Stephens	690
Urbana	375
Total Arkansas	37,490
Total previous week	37,625
Decrease	135
Total both states	65,865
Total previous week	66,810
Decrease	945

Two Shelby County Wildcats Watched

Interest again is centered on two wildcats in Shelby County, East Texas. McRoby and others have set 8-inch casing on top of the Natchitoches formation at 1,750 feet in their No. 1 Windham, William Leach Survey. Sufficient gas was obtained from 2,282 feet to force mud from the hole and the well is being bailed from that total depth. The test is in the vicinity of the Sloane-Tokio Oil Co.'s No. 1 Windham, H. English Sur-

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WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Rotary operations unless otherwise designated)

NORTH LOUISIANA

BOSSIER PARISH

Company, farm and location— Remarks:

Andrews & Davlin's No. 1 Nattin, 100 ft. N, 250 ft. W, C, Sec. 15-22-14 ..... S.D. 2,890 ft.
Dr. W. N. Hankin's No. 1 Newell, 300 ft. S and W, NE cor., Sec. 12-19-11 ..... S.D. 1,350 ft.
D. L. Perkins' No. 1 Ardis & Co., 1,127 ft. N, 198 ft. E, SW cor., Sec. 13-15-11 ..... S.D. 1,004 ft.
Rombaugh et al's No. 1 Allison, SW SE, Sec. 10-19-13 ... Dry and abd. 1,600 ft.

CADDO PARISH

W. P. Wallace, tr.'s No. 2 Cunningham-O'Conner, 210 ft. S, 940 ft. E, NW cor., Sec. 15-17-14 ..... S.W. and abd.; T.D. 2,668 ft.

CALDWELL PARISH

Carter Bell's No. 1 Taylor, 150 ft. S, 150 ft. E, NW cor. NE SE, Sec. 17-14-4 ..... Set 12-in. csg. 110 ft.
Hudson et al's No. 1 Burton, Sec. 35-12-2e ..... S.D. 2,950 ft.

CATAHOULA PARISH

National Drlg. Co.'s No. 1 Marah McMiller, 70 ft. N, 100 ft. W, C, Sec. 26-9-6 ..... T.A. 3,097 ft.

CLAIBORNE—SUGAR CREEK

United Gas Public Service Co.'s No. 1 Treadwell & Hawk, 1,470 ft. S, 1,395 ft. E, NW cor., Sec. 6-19-5w.. Set 9-in. 4,225 ft.

DE SOTO PARISH

Keatchie O. & G. Co.'s No. 1 Hallie Smith (was H. E. Weichert's), NE SE, Sec. 31-14-15 ..... S.D. 2,350 ft.
Ben Merritt, tr.'s No. 1 Walluma, NE cor. SW SW, Sec. 19-12-12 ..... Set 6-in. csg. 2,580 ft.; T.D. 2,657 ft.
S. S. Meek, tr.'s No. 1 Wagner, 300 ft. S and E, NW cor. SE NW, Sec. 5-13-14 ..... Drlg. 3,020 ft.
E. T. Oakes' No. 1 R. H. Bryant et al, 200 ft. N and W, SE cor. NE NW, Sec. 36-13-15 ..... Reaming to bottom 2,892 ft.
Rellitt Oil Co.'s No. 1 Ganno hrs., 300 ft. S and E, NW cor. NW NE, Sec. 12-11-16 ..... Tested dry 1,965 ft., W.O.
Walters-Nicholson, tr.'s No. 1 Jim Guy, Sec. 3-11-13 .... S.D. 1,366 ft.

LA SALLE PARISH

Gulf Ref. Co.'s No. 1 Tremont Lbr. Co., 665 ft. N, 632 ft. E, SW cor., Sec. 10-9n-3e ..... Drlg. 3,719 ft.

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LOUISIANA-ARKANSAS PROVEN AREAS

NORTH LOUISIANA

CADDO PARISH—PINE ISLAND

Company, farm and location— Remarks:

Shreveport Oil Corp.'s No. 2-B Muslow, 1,000 ft. S, 300 ft. E, NW cor., Sec. 32-21-15 ..... S.D. 2,135 ft.
Simplex Oil Co.'s No. 1 Youree-Glassell, 500 ft. N and E, C, Sec. 13-20-15 ..... Set 6-in. 2,245 ft.

CADDO PARISH—RHODESSA AREA

United Gas Public Service Co.'s No. 1 H. J. Bussa, Sec. 33-23-16, 990 ft. W and 660 ft. S of NE cor. ..... Drlg. hard lime 3,191 ft.

MOREHOUSE PARISH

Bahan & Bahan's No. 4 Feazel, 900 ft. W, 300 ft. S, NE cor., Sec. 2-20-4 ..... Location.

OUACHITA PARISH

Carbon Consolidated's No. 7 Guthrie, Sec. 50-20n-4e, 5,263 ft. N, and 7,475 ft. W of corners of Secs. 25, 26 and 49, in Sec. 50 ..... Location.

RICHLAND PARISH

Southern Carbon Co.'s No. 1 Pollard, Sec. 26-16-5e, 2,710 ft. S and 563 ft. W of NE cor. ..... Derrick.
Southern Carbon Co.'s No. 6 Rosengraut & Ducomb, 2,640 ft. E, 1,980 ft. N, SW cor., Sec. 19-17-6 ..... Location.
Southern Carbon Co.'s No. 7 Rosengraut & Ducomb, Sec. 24-17-5e, 656 ft. W and 660 ft. S NE cor. ..... Drlg. 750 ft.
Southern Carbon Co.'s No. 8 Rosengraut & Ducomb, 2,546 ft. E, 660 ft. N, SW cor., Sec. 18-17-6e ..... Location.
United Gas Public Service Co.'s No. 5 Earle, Sec. 25-17-5e, 1,980 ft. E, 1,320 ft. S, NW cor. ..... Rigging up.
United Gas Public Service Co.'s No. 1 Faust, Sec. 18-17-5e, 320 ft. W, 600 ft. N, SE cor. ..... Began Oct. 1; set 13-in. 185 ft.

SABINE PARISH—ZWOLLE

Roy Baker's No. 1 Sabine Lbr. Co., Sec. 1-7-12 ..... W.O.S.R. 2,548 ft.
W. M. Coates' No. 1 Bowman-Hicks, 330 ft. S and W, of C, Sec. 2-7-13 ..... W.O.S.R. 2,441 ft.
W. M. Coates' No. 1-B Sabine Lbr. Co., 150 ft. N and E, SW cor. NW NW, Sec. 1-7-12 ..... Set 6-in. 2,237 ft.
W. M. Coates' No. 2 Hale, 330 ft. S and E, NW cor. SW NE, Sec. 1-7-13 ..... Rigging up.
Crescent Drilling Co.'s No. 1 Byrd, Sec. 12-7-11 ..... Drlg. 920 ft.

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Sixth New Pool Opened on Gulf Coast

Cameron Meadows Prospect, Cameron Parish, Louisiana, Has Well Flowing 1,000 Bbls. Manvel Dome Well Pressure Increases and Oil Drops

By Neil Williams
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., Oct. 12.—Cameron Meadows, a geophysical prospect in southern Cameron Parish, Louisiana, was definitely added to the list of producing fields of the Gulf Coast with completion of Vacuum Oil Co.'s No. 2 Cameron Meadows, Section 21-14s-9w, flowing 1,000 bbls. of pipe line oil daily from sand at a total depth of 5,270 feet. Late Monday operators were trying to kill the well to change manifold pending arrangements to take care of the oil. This is the sixth new field opened on the coast this year.

Production is through a three-eighths-inch choke with pressure gauging 800 pounds. Gravity of the oil is approximately 41 degrees. One joint of screen was set in the sand.

Location of this prospect is in the marsh land bordering the Gulf of Mexico and at present there is no provision for moving out the oil. The only access to the well has been by boat. No storage has been provided.

One other well, Vacuum's No. 1 Cameron Meadows, located 500 feet north of the present producer, has been completed on the prospect. It, however, was not a commercial producer, although it made initially 400,000 feet of gas and about 100 bbls. of fluid, mostly water, daily and indicated the existence of a field. It was completed in a sand at 3,850 feet after the hole had been sidetracked from a total depth of 5,240 feet. At the latter depth that well found the sand in which No. 2 is producing but stuck drill stem and a bad hole prevented its completion. Both wells encountered numerous sands showing oil.

Manvel Prospect

The Texas Company's No. 1 Belcher, discovery well of the Manvel geophysical prospect in northern Brazoria County, was brought back in the past week after being deepened 3 feet in the pay to a total depth of 5,483 feet and having screen reset. Late in the week this well was the center of interest when pressure climbed sharply from 300 pounds, the initial pressure, to above 2,000 pounds and started making some sand. At the same time it cut oil production, which had gone to as much as 90 bbls. hourly, to below 5 bbls. hourly.

In bringing the well back in, one joint of 6⅝-inch screen was set at 5,483 feet with tubing to top. It started flowing at the rate of 60 bbls. hourly of pipe line oil and had a pressure of 300 pounds on the casing and 100 pounds on the tubing through a five-eighths-inch choke. The production gradually increased along with the pressure and at a peak of 90 bbls. hourly it registered a pressure of 1,000 pounds with a five-eighths-inch choke on the tubing and a half-inch choke on casing. With further increase in pressure, however, oil production began to decline.

This well, located 157 feet from the northwest line and 223 feet from the southwest line of Lot 18, Block A, Suburban Gardens Subdivision, Harvey N. Little Survey, and the second test drilled on the prospect, came in originally September 9 flowing 2,000 bbls. daily on a three-fourths-inch choke. Until within the last two weeks it maintained a steady flow around 1,600 bbls. daily but then suddenly began to drop off rapidly. In going into the hole to work over, operators found the screen had been pushed 20 feet off bottom, leaving the hole sanded.

Other important developments on the Gulf Coast during the week were the completion of the second and third consecutive good wells in the new shallow sand on the east side of the Barbers Hill Dome, the bringing in of the third producer in the recently opened extension pool northeast of the Refugio Field, the addition of a prolific well in the new north extension of East Hackberry and the resumption of work in several additional fields where drilling has been suspended for several months.

Barbers Hill

At Barbers Hill, McAlbert Oil Co.'s No. 4 Wilburn, south offset to The Texas Company's No. 6 Wilburn, discovery well of the new shallow sand on the east side of Barbers Hill, was completed in the sand at 4,425-51 feet, flowing 1,440 bbls. of pipe line oil daily through a half-inch choke, pressure 350 pounds. Gulf Production Co.'s No. 5 Wilburn, offsetting the McAlbert tract to the south, was completed in the sand at 4,494 feet, with 50 feet of screen, flowing 1,680 bbls. daily, 400 pounds pressure, through two three-eighths-inch choke.

These are the first two wells completed in the new drilling play which has sprung up on the east side of the dome following the completion of The Texas Company's No. 6 Wilburn early in August as good for 3,000 bbls. daily in sand at a total depth of 4,509 feet. The new sand is just above the Big Lime and underlying the salt overhang high up on the dome. The development is just inside the circle of deep sand play which took place during the latter part of 1929 and 1930.

On the northeast side of the dome, Humphreys Corp. is expecting a good well in its No. 1 Ebanspacker to extend production in that pool a little over 200 feet southeastwardly as a link in connecting that pool with production on the east flank. The test was coring sand and shale at 5,313 feet at latest report. This company also has made location for another test, No. 3-B Barber, on that flank and located 218 feet to the west of No. 2-A, at present the most westerly well of that pool, extending along the north and northeast flank.

On the west flank of Barbers Hill, Rio Bravo Oil Co. has completed its No. 2 Fisher as a workover pumping 60 bbls. daily. Total depth of the hole is 5,390 feet. A series of other wells at Barbers Hill is now on or nearing the pay sands and should result in the addition of a substantial amount of new production within the next week or 10 days.

Refugio's New Pool

In the Refugio district, United Production Corp.'s No. 4 M. F. Lambert, located in the new pool opened earlier this year some 3½ miles northeast of the main Refugio Field and about 1½ miles north of what is known as the Lambert Pool, has been completed flowing 1,024 bbls. of pipe line oil with 18 feet of screen set at 5,830 feet. The hole originally had been drilled to a total depth of 5,925 feet but was plugged back. The well had a pressure of 900 pounds on the tubing and 890 pounds on the casing through quarter-inch chokes. This well is the third completed in the pool with no failures. It is 660 feet southeast of No. 1-B Fox, the second well, which in turn is 1,350 feet southwest of No. 1-A Fox, the discovery well. All are in the William Hews and L. Brown Survey. A fourth test, 1,600 feet northeast of No. 1-A Fox, is drilling in the area. In the main Refugio Field, Moody-Seagraves Producing Co. has completed No. 4 O'Connor flowing 65 bbls. daily, 1,400 pounds pressure, with one joint of screen at 6,386 feet.

Considerable interest was attracted to Humble Oil & Refining Co.'s No. 1 O'Connor, a rank wildcat in the northeastern part of Refugio County in the John Keating Survey, when early in the week it blew out from a sand around 2,300-09 feet. Total depth of the hole was 3,814 feet. The well blew out of control four days before being killed. The test now is drilling in hard sand at 3,837 feet. This wildcat is just over the line from Victoria County and is approximately 4 miles southwest of The Texas Company's McFaddin wildcat gasser, which in turn is some 3½ miles west of United Production Corp.'s McFaddin gas field. The Humble wildcat has encountered several sands. The one from which it is supposed to have blown out was tested several weeks ago with a drill stem tester showing 800 pounds pressure through a three-eighths-inch choke.

East Hackberry

In the north extension pool of East Hackberry, Cameron Parish, Louisiana, Calcasieu Oil Co.'s No. 26 Watkins, which was completed flowing 3,000 bbls. daily through a three-quarters-inch choke, pressure 1,085 pounds, has increased its production to above 4,650 bbls. daily through a half-inch and a three-quarters-inch choke and shows a pressure of 770 pounds. It is in sand at 3,008 feet with 19 feet 11 inches of 4½-inch screen. This is the second well completed in the area, the discovery well being J. G. Sutton's No. 1 Irwin, completed two months ago as a 1,200-bbl. well.

Humble Pool

At Humble, The Texas Company got a small workover well in its No. 24 Koehler, which was sidetracked to its present sand depth at 2,990 feet and brought in flowing 120 bbls. net oil.

Louisiana Wildcat

In Calcasieu Parish, Vacuum Oil Co.'s No. 1 Waite on the Iowa Geophysical prospect is in sand showing oil at a total depth of 6,965 feet and is reaming to set casing to test. This test was formerly drilled to this sand at 6,961-79 feet but lost a joint of screen in the hole while setting and following a blowout from sand at 5,000-08 feet which damaged the hole, the old hole was sidetracked back down to the sand. This well, the first on the prospect, made a short lived well from the 5,000-foot sand early in the year.

New Sand at Lockwood

A new deep sand has been encountered in the Lockwood (Thompson) Field, recently opened in eastern Fort Bend County by Cullen & West and Gulf Production Co. These operators' No. 2 A. P. George, which passed up the 3,500-foot sand found productive in the other three wells in that area, has been deepened to 5,123 feet where it is in sand showing oil topped at 5,119 feet. It is reaming to set casing. A deep sand with an odor of oil also was topped at 5,089 feet in No. 2-A Lockwood & Sharp. This test, which originally was completed in sand at 3,179 feet making 175 bbls. of oil with 8,000,000 feet of gas but which went to water, is 800 feet north, 20° west of No. 1-A, the discovery well, which was completed at 3,087 feet. These wells are a half mile to the north of the deep George test and the three 3,500-foot wells.

The Texas Company has made location for its third test at Leesville, LaFourche Parish. This test, No. 3 L.L.&E., is 4,439 feet south and 468 feet east of the NW cor., Section 26-21s-22e, which places it 237 feet west and 43 feet south of No. 2 L.L.&E., discovery well of the field. The latter originally was completed last February as a producer in sand at 3,028 feet. It later was deepened to another sand at 3,598-3,628 feet, where it was completed successfully again but now is producing from a still lower sand at 3,665-89 feet, to which it was deepened during August.

To Resume at Sorrento

In line with the trend to increased operations on the Gulf Coast, Gulf Refining

(Continued on Page 81)

GULF COAST FIELDS AND WILDCATS

Week Ended October 10

All Rotary

BARBERS HILL—CHAMBERS COUNTY

Mills Bennett Production Co.'s No. 5 Wilburn, Henry Griffith League, 350 ft. W of No. 4 in C of lease	Drlg. hard sand and lime 3,225 ft.
Mills Bennett Production Co.'s No. 1 Gulf Fee, Henry Griffith League, 50 ft. out of NE cor., Strip 15	Cmtng. cavity 1,341 ft.
Mills Bennett Prod. Co.'s No. 3 Gulf Fisher (W.O.), Wm. Bloodgood Sur., 600 ft. from S line and 50 ft. from W line of 25-ac. tr.	T.D. 4,437 ft; fishing screen to deepen.
Gulf Production Co.'s No. 5 J. F. Wilburn, Henry Griffith League, 50 ft. from N line of tract and 210 ft. W of No. 1	Set 50 ft. screen 4,494 ft; completed flowing 1,680 b'ls P.L.O., 400 lbs. pressure, two ⅜-in. chokes.
Humphreys Corp.'s No. 6 E. H. Winfree, W. D. Smith Sur., 50 ft. from N line and 50 ft. from W line of tract	Set 328 ft. of 7-in. screen 5,620 ft; rigging up to pump.
Humphreys Corp.'s No. 1 Ebanspacker, Henry Griffith League, 700 ft. from the N line and 70.6 ft. from the E and W lines of the tract	Drlg. sand and shale 5,313 ft.
Humphreys Corp.'s No. 8-H Kirby, Henry Griffith League, 333 ft. W of No. 6-H Kirby and 70 ft. N of S line	T.D. 2,867 ft; sidetracked at 2,328 ft. and drlg. rock 2,347 ft.
Humphreys Corp.'s No. 2 Tarbutton, Henry Griffith League, 385 ft. from E line and 21 ft. from N line of tract	Drlg. hard sandy lime 3,324 ft.
Humphreys Corp.'s No. 3-B Barber, Henry Griffith League, 538 ft. from E line, 76 ft. from S line of tr.	Rigging up.
McAlbert Oil Co.'s No. 4 Wilburn, Henry Griffith League, 200 ft. W of No. 2 in C of lease, N and S	Sand showing oil 4,425-51 ft; set 46 ft. of 5-in. (O.D.) screen; completed flowing 1,440 bbls. P. L.O., 350 lbs. pressure, ½-in. choke.
McAlbert Oil Co.'s No. 1 Woodward (W.O.), Wm. Hodges Sur.	T.D. 5,341 ft; rig up to W.O.
Rio Bravo Oil Co.'s No. 2 Fisher (W.O.), W. D. Smith Sur., 50 ft. out of NW cor. of tract	T.D. 5,360 ft; perforated csg.; completed pumping 60 bbls. daily.

(Continued on Page 65)

Saxet Field Sees First Big Oil Well

No. 1 Roark Goes Into New Deep Sand and a Drill-Stem Test Indicates It Will Be Good for 1,000 Bbls. a Day

By B. D. Stevenson
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., Oct. 12.—The Saxet Field, a few miles west of Corpus Christi in Nueces County, jumped into prominence this week when Neal-Milton and the Kepley Production Co. went into a new deep sand at 4,825-32 feet in the No. 1 Roark that on drill stem test flowed in about 15 minutes. Conservative estimates are that when completed it will make 1,000 bbls. a day. It looks like the first big oil well in the entire district.

The Saxet Field was discovered for gas originally at around 2,300 to 2,500 feet. Later some wells were brought in for a lot of gas and making around 50 to 150 bbls. of oil at an average of around 4,075 feet, the deepest in that sand being 4,097 feet total depth. Two other wells were brought in for a little bigger production on the Dunn lease of the Saxet Oil Co. at 4,300 feet for about 100 bbls., and more recently the Gulf Coast Oil Co. deepened its No. 1 Harrell, which was a well of about the same size in sand at 4,095 feet, down to 4,553 feet, where it was completed in a new sand for an initial production of 158 bbls. through a bottom hole choke. It is the only test producing in that sand either gas or oil.

There have been a few tests in the Saxet Field that have gone much below the depth at which the new well produced. The Independent Oil & Gas Co., now the Phillips Petroleum Co., drilled the No. 1 Baldwin last year, 3 miles southeast of the new well, to around 6,100 feet and it had a sand at about the same depth as No. 1 Roark, and presumably the same sand, but failed to produce.

The original Saxet gas field consists of a group of about a dozen wells covering a small area immediately south of Nueces Bay. One gasser at 2,500 feet is out in the bay. These same sands have been extended and, including the deeper sands, the field is now 5 miles long east and west and about 2 miles wide north and south.

The No. 1 Roark of Neal-Milton and Kepley Production Co. is on the west edge of the original gas area and is on the north edge of the Saxet area as now developed. In the center of the north edge of the area the Gulf Coast Oil Co. carried its No. 1 Harrell down to 5,225 feet and then plugged back to the sand at 4,553 where it is now producing. The Houston Oil Co.'s No. 2 Rand Morgan in approximately the center of the whole area was carried to 6,375 feet and then plugged back to 4,095 feet and completed as a big gas well making some oil.

The anticlines mapped by Alexander Duessen in professional paper No. 126 of the Geological Survey and running more or less parallel with the Gulf shore line extend 40 to 50 miles northeast and southwest of the Saxet Field, reaching as far north as the Refugio Field. This has led to the conclusion that conditions in the Saxet and White Point Fields will be much the same as in the Refugio Field where there were many gas sands in the shallower depths and finally some heavy producing oil sands in the lower horizons. Thus far the Saxet Field has encouraged that idea and the new deep oil sand further strengthens the idea.

There is a general conviction on the part of those who have studied this area that it has a lot of possibilities yet undeveloped. Some sands have been encountered with pretty good showings in various tests, but they have never been developed for one reason or another.

Cole Field in Duval

Cole Petroleum Co.'s No. 70 Benavides in the east edge of the center of the Cole gas field with a sand showing oil at 1,730 feet, and Southern Gas Utilities with a gas well at 2,451 feet have brought back the Cole Field to new interest. The South Gas Utilities' No. 1 Benavides is in the northeast corner of Survey 173 and is a west offset to the Magnolia Petroleum Co.'s No. 1 Benavides in the northwest corner of Survey No. 172. They are on the extreme south edge of the O'Hern-Seacord Pool, which is at the south end of the Cole Field, and they are the only two wells in that sand. Magnolia completed its test several months ago for 35,000,000 feet of gas with 1,100 pounds pressure. The Southern Gas Utilities test shows 940 pounds on a drill stem test in five minutes in sand at 2,433-51 feet compared to sand in the Magnolia well at 2,455-65 feet.

Cole Petroleum Co.'s No. 70 Benavides is in Block 8 of Section 19, about the middle of the Cole area north and south, and is a location east of the No. 39 Benavides drilled in the early days of the field and which came in gas. Quite a good many wells in the Cole Field have made oil and some that were originally gas wells with no oil have later made quite a lot of oil. Nearly 2 miles north and still on the east edge of the gas field is the Cin-Tex wells that came in as oil wells in the early days of the field and farther south in the O'Hern-Seacord area is still more oil, all in the sand at a little below 1,700 feet.

Schoolfield-O'Byrne Pool

Two completions were due in the Schoolfield-O'Byrne Pool extension this week but only one is reported. Duval Oil Corp. got a big well in its No. 5 Bishop Cattle Co. It is making 500 bbls. on small choke at 2,327 feet and with heavy gas pressure. The farthest north test in the field, Humble Oil & Refining Co.'s No. 1 Paul White, at 2,339 feet hasn't been quite as encouraging. It is swabbing and has not acted like a big well.

Pettus District

In the Pettus district, which it was thought last week might be in by this time, are still no wells. Buchanan & Lefevre's No. 1 Ray, over 3,000 feet west of the Damac discovery well, due to some breakdowns and delays, was down a little below 3,700 feet late in the week and with plans to core beginning at 3,800 feet. This test ran high on the Jackson and if it makes a producer will be a big and important extension of this new pool. The Damac No. 1 Ray in the northeast corner of the John W. Williamson Survey, is nearly as far east as the field will probably run. The Pettus Pool is a mile to the east and there is a fault line between them. If the new pool extends very far it must go to the west or southwest.

T. B. Slick estate No. 1 Ray, a north offset, and about two locations away from the discovery well, at 3,939 feet set casing and has drilled plugs and is running tubing. Total depth of the Damac well is 3,925 feet and the difference in the depth of the two tests is accounted for by the Slick well having a crooked hole as revealed by an acid bottle test. It is presumed to be actually at about the same depth as the discovery well and was ready late in the week to be brought in.

United Production Co.'s No. 39 Ray is now down to 6,152 feet. This test is located on the north edge and east end of the Ray-McKinney Pool a mile northeast of the Pettus townsite. The Ray-McKinney Pool and townsite pool have now been all merged into one, and the No. 39 Ray is now the deepest hole that has been drilled in the field. It missed the pay in sand producing in other wells in that end of the field at about 3,975 feet.

Miscellaneous

Completions, abandonments and new locations the past week have carried nothing of particular interest. There were a dozen new locations announced which keeps up the average of new activity that has lately started in. The number of tests listed is now gradually increasing, the increase being about evenly divided between the Laredo district and the rest of Southwest Texas.

United North & South Development Co. is to drill a test 8 miles southwest of Kennedy in Karnes County and about 10 or 12 miles northwest of the Pettus Field in Bee County. About half way between the new test and the Pettus Field the Fort Bend Oil Co. last year drilled the No. 1 Newberry, which at 2,992 feet had about 4,000,000 feet of gas but which had a lot of mechanical trouble and was finally carried to 4,003 feet and abandoned.

Plymouth Oil Co. has the derrick up for its wildcat test in eastern Goliad County on the Parks land, where the Gibson Oil Corp. some months ago had a good showing in sand about a mile deep. In western Goliad County Camp and Stanolind are down around 3,000 feet in the No. 2 Pettus. This test is of much interest for the reason that the No. 1 Pettus carried as Neuhaus and Stanolind's, made a small well in sand at about the same depth and identified as the same sand as is producing in the Pettus Field. It was too good a well to plug and may be an edge proposition. The Camp and Stanolind's No. 2 Pettus will help prove out that territory which is about 15 miles due northeast of the Pettus Field and about 6 miles southwest of the Slick Pool on the DeWitt-Goliad County line.

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

ATASCOSA COUNTY

Company, farm and location— Remarks:
Glen Mathis' No. 2 Mrs. C. Martin, 100 ft. SE of No. 1...T. D. 2,980 ft.; shut down.

BLANCO COUNTY

Hardy-Sitton's No. 1 McMillan.....T. D. 602 ft.; shut down.
Theo. Hicks' No. 1 Specht, 1,500 ft. from S line, 500 ft. from W line of farm in Thomas M. Fowler Sur. No. 27 in extreme south point of county.....T. D. 960 ft.; fishing.
Lilas Adams et al's No. 1 Stanford, 150 ft. to S line, 1,420 ft. to E line of James Stanford's No. 155.....T. D. 1,100 ft.; drlg.
McCleary et al's No. 1 Schenling, 900 ft. to SE line, 600 ft. to S line of J. A. Rouse No. 118 Sur., 4 miles SW from Blanco City.....T. D. 574 ft.; shut down.
C. Rosenfield's No. 1 Hohenberger, 800 ft. to W line, 1,260 ft. to N line, Sur. No. 94.....T. D. 712 ft.; shut down.

BASTROP COUNTY

W. A. Allen's No. 1 Birmingham, James Stewart Sur.....T. D. 1,215 ft.; no report.
Texas Dev. Co.'s No. 1 C. H. Ray, 600 ft. from W line and 400 ft. from S line of farm in Thos. Christian Sur. .....Spudded and shut down.

BELL COUNTY

Field & Lange's No. 1 Stubblefield, 450 ft. from S line and 150 ft. from E line of farm in Antonio Manchaca Sur. .....T. D. 410 ft.; drlg.
Fields & Lange's No. 1 C. S. White, 150 ft. from S line, 300 ft. to E line of farm in Nancy Roberts Sur.....T. D. 297 ft.; abnd.
Hartman Drilling Co.'s No. 1 E. L. Deaver, 600 ft. to N and 300 ft. to E line of farm, in Nancy Roberts Sur..T. D. 530 ft.; dry and aband.
J. W. Riley's No. 1 W. S. Chaffin, in M. Griffin Sur.....Spudded and shut down.
James Scroggins' No. 1 Warrick, Ingram Sur.....T. D. 1,425 ft.; fishing.

BEE COUNTY

Alexander et al's No. 1 McFall, 3 miles S Skidmore.....T. D. 1,870 ft.; no report.
Hughes et al's No. 1 Martin, 1,000 ft. S of Simms Oil Co.'s No. 1 Holxmark in John Lyford Sur.....Rigging up.
Humble Oil & Ref. Co.'s No. 1 Laura Thompson, 6,360 ft. from N line, 15,100 ft. from W line of tract in Garrett Roache Sur., S part of county.....T. D. 1,310 ft.; set csg.

(Continued on Page 70)

SOUTHWEST TEXAS PROVEN AREAS

DOBROWOLSKI POOL—BEXAR COUNTY

Company, farm and location— Remarks:
W. S. Rogers et al's No. 1 L. Dunnop, Juan Montes Sur. .....T. D. 612 ft.; shut down.
Gatlin Oil Co.'s No. 8 Ida A. Beck .....T. D. 697 ft.; complete 10 bbls.
Gatlin Oil Co.'s No. 9 Beck .....Making location.
Whipple et al's No. 1 Gembler, 3,000 ft. to S line, 150 ft. to E line of A. Manchaca Sur. .....Location.

PETTUS POOL—BEE COUNTY

J. L. Mauldin's No. 1 fee, 1,300 ft. N of S line, 150 ft. E of Medio Creek, Kerr County.....T. D. 3,930 ft.; standing.
Geo. N. Moore et al's No. 2 Freeland, in John Pace Sur., 1,000 ft. from S line, 600 ft. from E line of survey...T. D. 4,297 ft.; standing.
United Prod. Co.'s No. 39 Ray, 1,130 ft. to SE line, 2,396 ft. to SW line of T. Hanson Sur.....T. D. 5,537 ft.; drlg.
T. B. Slick estate's No. 1 Ray, in Kerr Sur., 310 ft. W of NE cor. of John W. Williamson Sur. and 330 ft. N of N line of same survey (location changed).....T. D. 3,939 ft.; setting csg.
Buchanan & Lefevre's No. 1 Ray, 3,154 ft. from E line, 150 ft. from N line of John W. Williamson Sur.....T. D. 3,900 ft.; coring for sand.
H. H. Weinert's No. 1 Ray, 150 ft. from N and E lines of lease in John W. Williamson Sur.....Derrick.
Houston Oil Co.'s No. 2 Portis, 330 ft. from N and W lines of A. Smalley Sur. .....Location.

BRUNER POOL—CALDWELL COUNTY

Joe Bruner's No. 1 Malone, 150 ft. to N line, 750 ft. to W line of tract, A. Floyd Sur.....T. D. 2,572 ft.; set csg.; standing.

COLE FIELD—DUVAL COUNTY

Cole Petroleum Co.'s No. 70 Benavides, 360 ft. to NE line, 660 ft. to NW line of Lot 8, Sec. 19, Arispe grant.T. D. 1,730 ft., in sand.

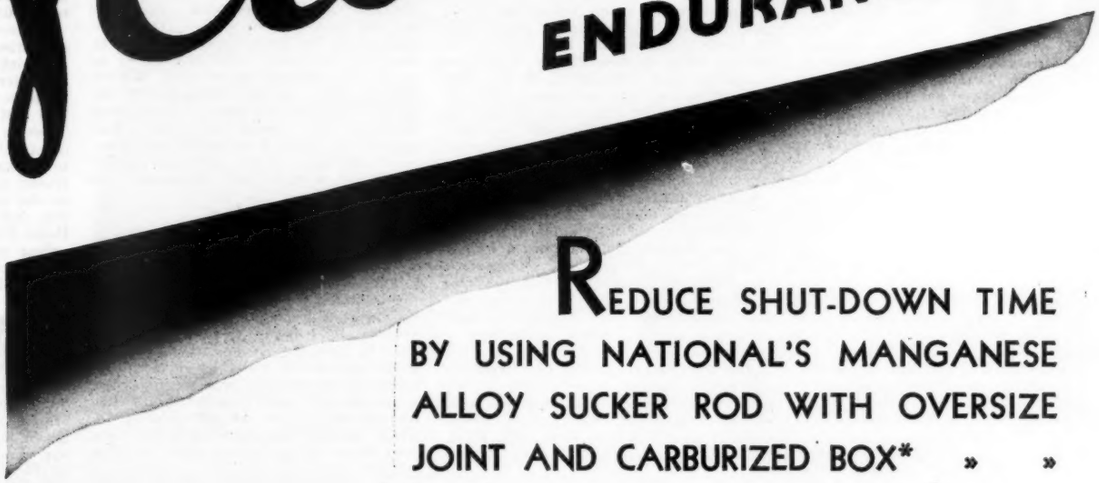
SCHOOLFIELD-O'BYRNE POOL—DUVAL COUNTY

Magnolia Petroleum Co.'s No. 5 Wilson, 330 ft. from N line and 1,920 ft. from W line of Sur. No. 134 .....Location.
Humble Oil & Refining Co.'s No. 1 White, 330 ft. from S line, 1,650 ft. from W line of Sur. No. 58.....T. D. 2,339 ft.; swabbing.

(Continued on Page 70)

New

DESIGN
MATERIALS
HEAT TREATMENT
ENDURANCE



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THE NATIONAL SUPPLY COMPANIES

Spring Play in Northeastern Colorado

More Than 60,000 Acres Leased on Structure Northeast of Greasewood. Block Southeast of Fort Morgan to Be Tested

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Oct. 12.—Major operators are leasing acreage in northeastern Colorado on a scale that indicates a big wildcat play the coming spring. More than 60,000 acres have been leased on a structure to the northeast of the Greasewood operation and a large block to the southeast of Fort Morgan is to be tested. The Reiter-Foster Oil Co.'s No. 1 Ida Johnson, on the Greasewood Dome, responded favorably when swabbed and again is flowing better than 400 bbls. per day. The Indian Territory Illuminating Oil Co.'s test on the Fort Morgan anticline looks discouraging. Moffat County is scheduled for some wildcatting soon.

Pipe line runs from the Hobbs Pool in New Mexico aggregated 1,087,389 bbls. in September. Allowable outlet remains at 36,968 bbls. daily. Another location was made in the Hobbs Pool. A test for carbon dioxide gas is spudding in Santa Fe County.

An extension of the Dry Creek Dome in Montana a mile to the northwest is imminent in the Ohio Oil Co.'s No. 1 Chapman, which is showing oil and gas in the Frontier. The gas area in the Cut Bank Field has been extended a mile to the southwest in O'Neil's No. 1 State, which is making 10,000,000 feet of gas and drilling deeper.

The Midwest Refining Co.'s Midway Dome test in Wyoming is making better than 135 bbls. of oil from the Muddy sand while testing for a water shutoff and looks as if it will be a good well. One shale well on the east side of Salt Creek was abandoned. The Riggs well, which extends the Osage Field a mile to the west, is flowing 130 bbls. without being shot, swabbed or deepened.

COLORADO

Leasing by major companies in northeastern Colorado is taking place on a larger scale at present than at any time since attention was called to that area last fall by the bringing in of the discovery well on the Greasewood Flats and the wildcatting campaign that is slowly developing promises to go forward in the spring on a big scale. Prospecting over a wide area is now considered a certainty in spite of the fact that most of the acreage is being taken on 5 and 10-year commercial leases. Several big plays are being lined up and important deals are being reported almost daily.

One of the biggest lease plays now taking place is in eastern Weld County in the New Raymer, Pawnee and Stoneham districts, 15 to 25 miles northeast of the producing wells on the Greasewood Dome and 20 to 25 miles north of Fort Morgan. Approximately 60,000 acres in this district have been leased by the major companies, including the California Co., subsidiary of the Standard Oil Co. of California, the Magnolia Petroleum Co., the Continental Oil Co., the Ohio Oil Co., the Producers & Refiners Corp., Ramsey Brothers, W. L. Christiana, T. V. Addington, and others. This block, which appears to be on one of the largest structures so far mapped in that territory, is mostly in Townships 7, 8, 9 and 10 North, Ranges 58 and 59 West. The California Co. has the largest block, comprising somewhere around 27,000 acres. T. V. Addington, a garage man at New Raymer, with C. H. Maybourn, has a block of 12,740 acres in 53 separate tracts, which provide for the starting of a well by May 1, 1932. Most of the remaining acreage is held on a rental basis with no immediate drilling requirements.

Another important deal reported this week involves a block of 10,480 acres to the southeast of Fort Morgan in Morgan County, which has been turned to William Meyers, Leslie Parker and associates. This block was taken under option several months ago by the Midwest Refining Co. from Clem S. Lee, county assessor of Morgan County, and A. C. Lusby. The Midwest was given until September 1 to coredrill the structure and it was upon this block that a number of Midwest geologists went to work as tool pushers when that company began reducing its geological staff. The Midwest company did not exercise its option when it was unable to get an extension until next spring on the drilling clause of the agreement. Several parties, including Frank E. Kistler, the Moody-Seagraves interests, and the Magnolia Petroleum Co., were reported negotiating for the block, but it finally went to William Meyers and associates. A tentative location has been made in the C NE SW Section 6-2n-56, about 6 miles southeast of Fort Morgan, but this may be changed if it is decided to put down a few more core holes. This block is mostly in Townships 2 and 3 North, Range 56 West. It will be called the Roundtop structure, on account of a high elevation at that point, being one of the highest in the county.

The Prairie Oil & Gas Co. has been putting on record more leases in the Crow Creek district, 7 miles to the west of the Greasewood wells and in Townships 6 and 7 North, Range 62 West. Altogether it has better than 10,000 acres. It is understood that this block is to be tested at once, but that location has not yet been made pending some additional detail geological work. This block was gathered by Brimmer and Weeks, of Cheyenne, and Ross Heaton, consulting geologist of Denver, did the field work upon which the leases were taken.

Frank E. Kistler, founder of the Producers & Refiners Corp., and associates, are very active in Weld and Morgan Counties, but their blocks, with the exception of leases on state tracts in Section 36-6n-61 and Section 16-6n-60, south and east of the Greasewood wells, have not yet been put on record. The state leases call for four wells, the first to start by December 1 and the others to follow at intervals of 90 days. Kistler recently was elected chairman of the board of the Reiter-Foster Oil Corp., and Raymond G. Vincent, of Denver, was elected a director. It is understood, however, that some of the important plans are being worked out independent of that company.

Weld County

The Reiter-Foster Oil Corp.'s No. 1 Ida Johnson, C NE NW Section 24-6n-61, Greasewood Dome, which stopped flowing when the Continental Oil Co.'s No. 1 Briggs, C SE SW Section 24, came in several weeks ago, was swabbed last Saturday and began flowing by heads. This is accepted as evidence that the producing of the wells is going to be largely a mechanical problem that can be worked out satisfactorily. No. 1 Ida Johnson came back for 490 bbls. in 24 hours. It was then deepened 4 feet to a total depth of 6,656 feet with the production showing no important change. It is planned to drill it a few feet deeper.

Platte Valley Petroleum Co.'s No. 1 Patterson, NE SE NW Section 24-6n-61, the discovery well, which went off production when No. 1 Ida Johnson came in, was deepened to 6,691 feet, 31 feet in the sand, several weeks ago, making around 200 bbls. per day.

Continental Oil Co.'s No. 1 Briggs, C SE SW Section 24, which gauged 930 bbls. from the pay at 6,639-64 feet first 24 hours, was deepened 2 feet this week and in 24 hours ending at 7 a. m., October 6, made 750 bbls. The gas increased to 3,750,000 feet.

Greasewood production from three wells amounted to 17,724 bbls. in September, of which 5,724 bbls. was credited to No. 1 Patterson, 8,850 bbls. to No. 1 Ida Johnson, and 3,150 bbls. to No. 1 Briggs. The last named came in September 26. There is no big storage in the field and construction on the projected pipe line to Orchard has not begun. Large tank trucks are being used to move the oil to the railroad, the Continental putting five into service this week, and the Reiter-Foster company, which has been selling considerable oil in the field, is organizing a similar service. The Platte Valley oil has been moved by truck since the well came in a year ago.

Continental Oil Co.'s No. 1 Gadbois, C SE SW Section 24-6n-61, half a mile to the south of the discovery well and nearest producer, cemented 7-inch at 6,578 feet with 320 sacks. Sixteen tons of ice were used. The hole is being standardized at this depth. This is the next impending completion and will disclose important information as to the trend of the structure.

Greeley Oil Co.'s No. 1 Gadbois, C NW NW Section 25-6n-61, is drilling below 5,000 feet. It topped the Hygiene at 3,055 feet, as against 3,102 feet in the No. 1 Ida Johnson. The Hygiene was found nearly 70 feet higher than expected. This well is an offset on the south to the Continental's No. 1 Gadbois, and it now looks as if both may be on a local high.

The Ohio Oil Co. has erected a battery of seven tanks on the Gadbois lease, but otherwise has done nothing on its two locations in the C SW SE Section 24-6n-61 and C NE NW Section 25.

Reiter-Foster Oil Co.'s No. 1 Johnson-Juhl, C SE SE Section 14-6n-61, is drilling below 5,600 feet after cementing 9⅝-inch at 5,575 feet. Same company's No. 1 William Wilson, C NE SE Section 24-6n-61, spudded with a machine on October 5 and probably will test the horizon at 1,200 feet for water before changing over to rotary.

Aztec Corp.'s No. 1 State, C NE NE Section 16-6n-61, is standing with 15½-inch cemented at 100 feet. The Sultan Corp., which has the drilling contract, and which may put down this well as its own operation, is laying a 6-inch water line from the Riverside Reservoir, a distance of 12 miles. This pipe was purchased from the Midwest Refining Co. and trucked from Casper by the Anderson Trucking Co. It formerly was a carrier from the Teapot Dome pumping station to Salt Creek and a crew of 35 men was employed in taking it up. It is possible that part of this pipe will be used later in laying an oil line from Greasewood to a railroad connection.

The Gulf States Oil Corp., which is preparing to test a block on the Box Elder structure to the southwest of the Greasewood Dome, has changed the location for its No. 1 Bengston from the C SE NW of Section 6-4n-63, to the C NW NW of the same section and farm. Standard rig is being trucked in from Fort Collins.

(Continued on Page 81)

TURNER VALLEY OPERATORS TALK GAS MARKETING ORGANIZATION

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Oct. 10.—As an alternative to the Alberta government's unitization scheme for the Turner Valley Field, independent oil operators are discussing the formation of a gas marketing association to market the surplus gas from the field. The project, if carried out, would involve extensive pipe line construction to be financed by British or United States capital. Various potential markets have been suggested, including Winnipeg, Regina and other Manitoba and Saskatchewan cities, to the east; Montana and Washington to the south, and Vancouver and other British Columbia cities to the west. The British Columbia project appears to be most generally favored by operators. To ensure adequate gas reserves, the scope of the organization would be widened to take in the handling of gas from other fields which are now without markets.

A deputation of independent operators headed by Herbert Greenfield and including R. J. Hutchings and B. F. Hake, waited on Premier Brownlee and R. G. Reid, minister of mines, at Edmonton in reference to modification of the unitization scheme. The deputation requested increase of the daily gas quota from 100,000,000 to 200,000,000 feet, or, in the alternative, approval of the gas export and pipe line projects of the operators. No decision has yet been announced by the government in regard to these requests, pending further study of the conservation problem.

Imperial Drilling

In South Turner Valley, Sterling Pacific Oil Co.'s No. 2, LSD 10, Section 33-18-2w5, is drilling at 4,528 feet. South West Petroleum Co.'s No. 2, Section 8-19-2w5, is at 5,407 feet and pulling casing.

In the Border fields, Texas-Imperial's No. 1, LSD 14, Section 22-8-22w4, on the Lethbridge structure, is standing cemented at 3,758 feet.

South Turner Valley Tests

In the South Turner Valley, Hylo Oils' No. 1, LSD 12, Section 4-19-2w5, is reported drilling open hole at 4,850 feet, with casing ready to run. Miracle Oils' No. 2, LSD 16, Section 5-19-2w5, is drilling close to the lime at 5,147 feet. Miracle's No. 3, LSD 11, Section 4-19-2w5, is drilling at 4,346 feet.

In the far south end of the field, Mar-Jon-Freehold's No. 1, LSD 9, Section 28-18-2w5, is reported drilling below 2,110 feet. Livingston Syndicate's No. 1 LSD 5, Section 34-18-2w5, has cemented casing at 2,160 feet.

Central Turner Valley

In the Central Field, McLeod Oil Co.'s No. 3, LSD 16, Section 1-20-3w5, is deepening in the lime below 5,200 feet.

Tests in the Foothills

On the Moose Mountain structure, Graystone Petroleums' No. 2 Signal Hill, LSD 9, Section 34-23-5w5, is drilling from 4,221 feet after installing new cable. This is the most northerly and the deepest of three tests drilling on the foothills

(Continued on Page 75)

AFTER 6 MONTHS IN ACID SLUDGE TONCAN IS

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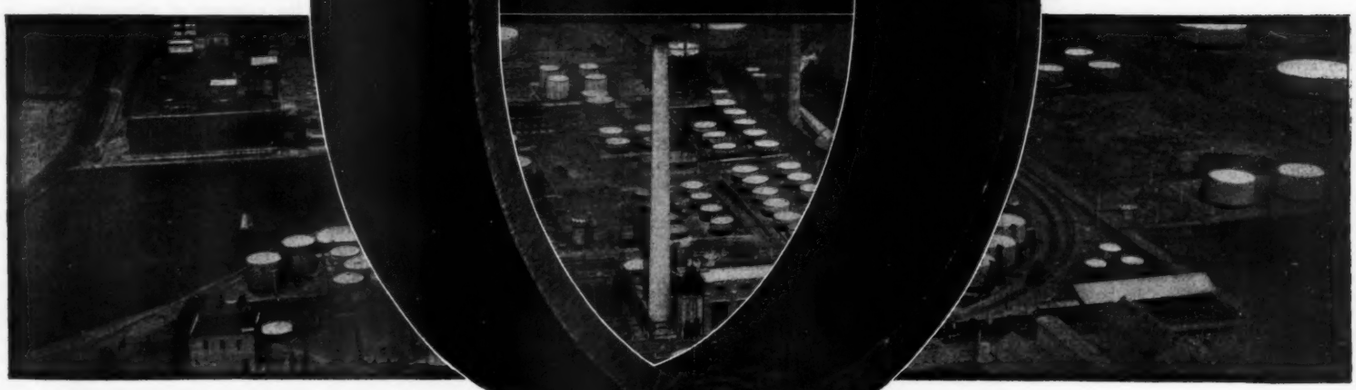

THE section of Toncan Iron Pipe illustrated here was taken from an acid-sludge line which had been in service over 6 months at the Coffeyville Refinery of Sinclair Refining Co. Note that despite this severe corrosive service, the pipe is entirely free from pitting or corrosion—and there has been no perceptible loss in weight.

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Gain Is Shown in California Production

Several Wells Scheduled for Completion May Cause Total to Fluctuate. General Conditions Improved. San Miguelito Test Uncertain

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., Oct. 10.—Crude oil production in California, which averaged 492,750 bbls. per day during the first week of October, has rebounded back above the 500,000-bbl. mark during the current week and recent developments indicate the probability that daily production will continue to hover around the latter figure during the present month.

Projected completions at Kettleman Hills, Dominguez and spasmodic completions in other districts should tend to arrest the decline which started late in September and extended over through the early part of October. The drop which carried state production down from 517,014 bbls. on September 14 to 484,708 bbls. on October 1 can be attributed to decreased drilling and the practice of producers in adjusting actual production to their respective allotments during the last two weeks of each month. There were very few new wells completed during September with the result that the production curve was free from any outside influence. There are several wells scheduled for completion during October, however, and state production will consequently be somewhat erratic during the next few weeks.

The Operators Committee on Statewide Curtailment reduced California's potential daily production 93,555 bbls., reducing the potential from 1,169,600 bbls. to 1,076,045 bbls. on October 1. This was accomplished by reducing the potential daily production of Kettleman Hills 32,000 bbls., Elwood 33,150 bbls., and Long Beach 20,400 bbls. No change was made in the maximum allowable production, which remains at 487,500 bbls. per day, although minor adjustments were made in the allotment of several fields throughout the State. Kettleman Hills, Elwood and Ventura Avenue retain their daily allotments of 60,000 bbls., 26,000 bbls., and 40,000 bbls. respectively. The allowable for Long Beach was cut from 76,500 bbls. to 72,000 bbls. and Santa Fe Springs from 55,000 bbls. to 53,500 bbls. The maximum allowable daily production of Huntington Beach was stepped up from 18,300 bbls. to 20,000 bbls., Playa Del Rey from 16,100 bbls. to 16,500 bbls. and Seal Beach from 10,600 bbls. to 12,000 bbls.

General Conditions Improved

Although daily production of crude oil registered a substantial increase during the current week, general conditions are somewhat improved. Gasoline prices are a little firmer and the outlook is quite promising for a further improvement. Marketers and refiners, both large and small, recognize the necessity of maintaining an even keel during the coming winter and a more general appreciation of the advisability of pursuing a constructive attitude is quite evident. Major companies have assumed a paternalistic attitude toward a number of independent refiners and are assisting them in securing adequate crude oil in order that they may maintain a normal operating status. This is especially apropos as crude oil is getting quite tight and will continue to become scarcer due to a normal decline in the production of Los Angeles Basin fields. Unless something unforeseen develops, it is not at all improbable that several of the smaller independent refiners will be offering premiums for sweet crude oil before the year draws to a close. As the situation stands at present we may anticipate a general improvement to the mutual benefit of both producers and refiners if operators rigidly adhere to the existing curtailment program and refrain from slipping any crude oil out the backdoor at reduced prices. During the past several months a substantial reduction has been effected in surplus stocks of crude and refined oils but this condition will not continue indefinitely as consumption during the next six months will probably be somewhat below par.

San Miguelito

The Continental Oil Co. has not yet succeeded in definitely proving the existence of a new oil field in the San Miguelito area, about midway between the Rincon and Ventura Avenue fields, due possibly to mechanical trouble. When this wildcat failed to respond to swabbing operations of several days' duration, the company re-entered the hole and found it bridged over just below the shoe. The well made several short flows during the initial production test and a water witch will be run in an effort to determine whether the water which accompanied the oil is formation water or due to a defective shutoff. It will be recalled that this wildcat blew in prematurely during the course of a water shutoff test flowing at the rate of 1,000 bbls. per day, with the result that the effectiveness of the cement job was not definitely determined. The company subsequently made a pressure test and the Mining Bureau granted a conditional release when the applied pressure of 1,275 pounds did not show any decline.

During the premature flow which took place during the water shutoff test, the Continental's wildcat showed considerable gas and when subsequently shut in the pressure gauge rose above 1,000 pounds. During swabbing operations the company subsequently found it necessary to suspend work for 24 hours due to the presence of gas in the cellar of the well and in the immediate locality especially in depressed areas where the existence of gas was quite evident. The failure of the well to flow in spite of this amount of gas has been somewhat discouraging, although consistent production may have been prevented by a sand bridge or a defective water shut off. The Chanslor-Canfield Midway Oil Co. experienced similar trouble with its No. 2-A Hobson, about a mile west of the Continental's No. 1 Grubb. The former well showed plenty of oil sand but insufficient gas to result in a sustained flow. As a result of this condition, the Chanslor-Canfield Midway Oil Co. resorted to artificial stimulation by putting No. 2-A Hobson on a compressor, and subsequently completed it doing 170 bbls. per day from 7,825 feet. Continued work during the next two weeks is expected to determine the future status of No. 1 Grubb, although it is not improbable that a little more hole may be opened if a satisfactory water shutoff is effected and the well still fails to result in sustained production.

Dominguez

The Union Oil Co. focused the attention of operators on the Dominguez Field of Los Angeles Basin during the week and incidentally revealed the tremendous reserve which this company and the Shell have in this prolific field. The fact that Dominguez has only barely been scratched is a matter of common knowledge to all California geologists and petroleum engineers. This opinion was further confirmed a few days ago when the Union's No. 26 Callender blew in flowing 40,000,000 feet of natural gas and 2,500 bbls. of clean 30.5 gravity oil during a water shutoff test at 4,860 feet. The flow from this well was subsequently killed and drilling will be resumed and the well carried down to the projected completion depth. A few days previous, the company's No. 4 Carson blew in during a water shutoff test flowing 2,500 bbls. of clean 31.4 gravity oil per day from 4,640 feet. This well was likewise killed and drilling resumed in order that a maximum penetration might be secured in the zone now being developed. The extent and thickness of this zone has not been fully determined as neither the Union nor Shell has developed production in this area below the 4,500-foot level. Two deep exploratory wells drilled a few years ago definitely indicated the existence of several deep virgin zones, however, but these horizons have not been produced both in the interest of conservation and the desire of the companies to maintain these zones as a future reserve.

The importance and productivity of the Dominguez Field of Los Angeles Basin cannot be overestimated and it is needless to say that this district, one of the very few free of town lot areas, will be an important factor in future state production. Dominguez has enjoyed normal development with liberal spacing of wells and consistent conservation of natural gas both by the Union and Shell. This field is one of several major productive districts located along the Newport Beverly Sheer zone and acre for acre should be as productive as the Long Beach Field, which to date has shown an average recovery per acre of 267,014 bbls. There are approximately 1,000 acres of potentially productive oil land within the proven limits of the Dominguez Field. It is not likely that Dominguez will produce as much oil as Long Beach as town lot development always results in maximum production per acre. From an economic standpoint, however, Dominguez has a distinct edge when one considers development costs and plots this factor against the ultimate recovery of crude oil, natural gas and natural gasoline. Up to the end of August, 1931, Long Beach has produced 440,573,365 bbls. of crude oil, compared with 48,303,664 bbls. for Dominguez. Deep tests drilled in the Dominguez Field up to the present indicate the existence of commercial production down to 8,000 feet and it is not improbable one or more zones will ultimately be found below this depth. The transition zone between the Miocene and Pliocene at Dominguez is believed to be somewhere around the 7,000-foot level, in which event the underlying Miocene should be productive down to at least 9,000 feet.

Coyote

While commenting on the future reserve of the Union and Shell at Dominguez and the productivity of this field, it might not be amiss to call attention to the substantial reserve which the Standard Oil Co. has in the West Coyote Field, in the eastern end of Los Angeles Basin. Three zones have already been found productive in the West Coyote Field, which the Standard controls in its entirety and it is logical to assume that subsequent development will reveal the existence of several more. The Standard proved the existence of commercial production in the 99 zone at West Coyote several years ago but this horizon, encountered at approximately 4,000 feet on the apex of the structure, has not yet been produced. Two wells approximately 2,000 feet apart have definitely proved it very prolific but this horizon and others known to exist below it are being held as a future reserve. The Standard has completed eight small wells in the shallow zone at West Coyote during the current year to date and is rigging up three more on the Murphy Coyote lease for additional development. All development up to the present time has been limited to the upper zone in which new wells register average initial daily productions of approximately 500 bbls. per day. The Standard's development work in the West Coyote Field and drilling operations of the Union Oil Co. at Dominguez are made necessary because of stringent lease requirements and not because of any desire of either company to stimulate production. As a matter of fact, the Union Oil Co. has expended a considerable sum during the past several years in order to secure extensions and waiver of the drilling clause from year to year. The Standard followed a similar procedure a few years ago with one of its insistent lessors.

Huntington Beach

Huntington Beach continues to be an enigma so far as deep zone production is concerned in the town lot area which

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Crude oil	.....	.....	.....	.....	.....	68,690
Fuel oil	.....	.....	.....	.....	.....	71,950
Diesel and gas oil	.....	.....	.....	.....	1,379,898	2,592,518
Gasoline	230,850	32,977	529,760	74,251	10,791,558	15,113,901
Kerosene	.....	.....	.....	.....	187,934	.....
Coastwise—						
Crude oil	341,831	48,840	206,926	29,561	17,168,292	12,031,232
Fuel oil	390,657	55,665	399,158	57,023	9,993,039	13,614,713
Diesel and gas oil	17,784	2,541	9,315	1,402	1,158,315	1,288,282
Gasoline	222,463	31,771	126,592	18,085	10,707,654	9,314,395
Kerosene	5,006	715	9,100	1,300	240,413	149,256
Naphtha distillates	.....	.....	.....	.....	4,952	.....
Exports—						
Crude oil	91,564	13,081	74,147	10,592	5,787,947	5,376,083
Fuel oil	235,517	33,645	54,260	7,751	10,435,334	14,045,673
Diesel and gas oil	28,130	4,019	90,013	12,859	2,845,823	3,546,209
Gasoline	337,567	48,224	.....	.....	6,823,116	12,532,663
Kerosene	89,730	12,819	.....	.....	1,321,179	2,984,674
Lubricants	.....	.....	.....	.....	36,353	27,434

TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC, GULF COAST PORTS

Diesel and gas oil	.....	.....	.....	.....	.....	279,088
Gasoline	151,760	21,680	.....	.....	833,939	1,008,757
Lubricants	.....	.....	.....	.....	35,236	24,774
Coastwise—						
Fuel oil	4,996	714	5,211	744	2,688,242	2,656,866
Diesel and gas oil	.....	.....	.....	.....	344,660	275,766
Gasoline	31,127	4,447	104,119	14,874	3,376,013	3,340,994
Kerosene	.....	.....	8,171	1,167	350,541	179,426
Naphtha distillate	.....	.....	.....	.....	49,780	.....
Exports—						
Crude oil	.....	.....	.....	.....	249,081	59,993
Fuel oil	.....	.....	82,036	11,862	1,285,726	809,316
Diesel and gas oil	.....	.....	48,356	6,908	435,293	457,539
Gasoline	77,600	11,086	211,363	30,195	3,450,174	3,231,619
Kerosene	.....	.....	59,305	8,458	688,272	546,848
Lubricants	.....	.....	.....	.....	25,693	33,579

parallels the ocean front. Opinion is fairly well divided on the possibility of developing a new deep zone in this particular section, although it is the hope of every operator that future development will be retarded as long as possible as another intensive town lot drilling campaign even though limited in scope would delay the return to normalcy. Three of the deep tests drilled in the Huntington Beach town lot area have been duds and while this has temporarily diverted attention away from the Huntington Beach Field, the fourth well, No. 1 fee of the Superior, has proved a magnet to draw the attention of several progressive operators. This well, the first deep test to be drilled at Huntington Beach, has been standing shut in for almost a year at 7,648 feet. The Superior never tested this well but William (Bill) Keck, an experienced operator, would not have acquired additional leases and drilled two more deep tests unless the first well, No. 1 fee, showed something to warrant this subsequent work. During the past few weeks the Superior's No. 1 fee, which shows a casing pressure of 450 pounds, has been showing some oil around the fittings, thus confirming the opinion of some that the Superior has opened a zone of considerable promise. The Huntington Beach Field is quite badly faulted with the result that subsurface conditions show a marked unconformity. The failure of three deep wells to pick up the Fee zone can therefore be easily explained and appreciated by those familiar with existing geological conditions resulting from faulting and cross faulting and the badly broken up condition of the productive formation. The Superior has not yet given up the attempt to develop deep commercial production in No. 1 Eberle, which at the present time is rotating at 7,825 feet.

Playa Del Rey

The Playa Del Rey Field reflecting decreased development, has finally reached the quiescence stage. Drilling operations are practically nil and no additional development is anticipated as the Union Oil Co. and the Ohio are the only concerns having any considerable amount of undeveloped acreage. Both of these concerns, incidentally, are anxious to retard development until conditions improve and crude oil commands a price equal to its intrinsic value from a refining standpoint. The Herndon Petroleum Co. has finally completed its No. 3 Venice doing 440 bbls. of 23.2 gravity oil per day from the deep Recreation zone at 6,335 feet. The initial production of this well, which came in several weeks ago flowing at the rate of 1,000 bbls. per day on a two-hour test, was distinctively disappointing as gas depletion made it necessary for the company to install a compressor.

The recent completion of two fairly good wells has stimulated drilling operations in the Potrero Field but it appears probable that this period of activity will be relatively short lived. The precedent established by the Potrero Field soon after its discovery by the Associated Oil Co. a few years ago still holds good both as to the older section of the field and the town lot area as well. The Associated, due to the failure of the oil sand at Potrero to show consistent production and produce sufficient oil to justify development, quit claimed several of its leases in this area a year or so ago. The Wilshire Oil Co. subsequently leased one of these properties, the Potrero Country Club, and a few months later finished a 1,000-bbl. well. Those unfamiliar with existing conditions thought the Associated passed up a good bet but subsequently changed their opinion when the Wilshire's initial completion on the Potrero Country Club property observed the usual precendent and promptly declined to reach the pumping stage within a short time. Of the hundred or so wells drilled in the Potrero Field up to the present, very few have ever paid out. New wells come in with quite a bang but the lack of sufficient gas soon manifests itself, at which time the well dies and requires artificial stimulation. The Wilshire Oil Co. recently spudded in its second test on the Potrero Country Club property and this well, which will probably cost $50,000 from spud to completion, will probably come in flowing about 500 bbls. and then follow the usual precedent established by previous fields on both this lease and in the town lot area.

The Beloil Corp.'s No. 1 Coffin, which recently opened up a new deep zone at 6,508 feet, has shown a substantial decline in production and is cutting in excess of 12 per cent. The completion of this well stimulated interest in the town lot area with the result that several other wells are being carried down to this new horizon, which appears of doubtful value from an economic standpoint. Operators who have drilled 6,000-foot holes in the town lot area at Potrero will probably find it advantageous to get this additional production for an expediture of a few hundred dollars and thus reduce the total loss incurred up to the present. It is exceedingly doubtful, however, that this new zone will have any appreciable effect on production. None of the five or six zones found in the Potrero Field has been of sufficient thickness to produce any considerable quantity of oil. Oil zones in California under 100 feet in thickness have as a rule failed to justify development work. Los Cerritos, Potrero and the Lawndale Field of Los Angeles Basin are outstanding examples of where relatively thin oil zones have cost operators millions of dollars due to the limited production developed in each area.

Seal Beach

After several months of hard conscientious work the Continental Oil Co. has finally succeeded in completing No. 24 Selover, a deep zone exploratory well in the Seal Beach Field of Los Angeles Basin. It is doubtful if the completion of this new well has reached a responsive chord as present production is not commercially profitable. It may, however, be of sufficient importance from a geological standpoint in view of the fact that it tends to indicate the existence of a new deep, although questionable horizon. No. 24 Selover, a real deep well, was officially completed as a 30-bbl. pumper from 9,054 feet, the big oil being exceptionally clean and testing 29.9 degrees. This well is of particular interest in view of tentative proposals to unify deep zone development in the Seal Beach Field. This program has not progressed beyond the discussion stage but has exceptional merit from an economic standpoint as it would eliminate competitive drilling and substantially reduce unnecessary development. The Associated Oil Co., which, like other California operators, is disposing of unprofitable leases, has sold its one-half interest in the Haviland lease at Rosecrans to the Wilshire Oil Co. for a consideration reported to approximate $15,000. To the Cypress Petroleum Co. the Associated assigned its interest and equity in the Higgins and Wanka leases, both of which are also located in the Rosecrans Field. The Empire Lease & Royalty Co. has tentatively concluded negotiations with the Sun Oil Co. of California whereby it acquires the latter's leases and wells in the Huntington Beach Field and will proceed to prosecute additional development when developments warrant.

Kettleman Hills

Several wells are nearing the projected completion depth in the north dome at Kettleman Hills but it appears probable that some of them will be shut in immediately subsequent to completion. This is expected to be the status of the Superior Oil Co.'s No. 3 Huffman, scheduled for completion early in November, but which cannot be completed and kept on production without upsetting the present equilibrium of that field. The Standard's No. 65-29 J, however, is expected to be completed within a few days and will probably be allowed to remain on production unless of course the gas-oil ratio is excessive. The Kettleman North Dome Association should also list a new well for completion within the next 30 days but this company, like other operators at Kettleman Hills, has a pegged allowable irrespective of the number of producing wells.

No 1 Burbank, of the Petroleum Securities, is expected to be given a production test some time during the next 30 days, provided developments warrant. This well already has a penetration in the Temblor of 200 feet and should acquire the necessary 1,000 feet in the near future. At times this well looks unusually promising and at other intervals the outcome appears rather uncertain. It is thought probable, however, that No. 1 Burbank of the Petroleum Securities will register commercial production. This well will open up a new field if production is developed as it is in the middle dome of

(Continued on Page 77)

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, well, location—	S.T.R.	Depth	Status
Hines Pet., No. 1 Ocean Park, Los Angeles Co.	9- 2-15	7,350	br. sh. drilling
Taylor Oil Co., No. 1 Culver, Los Angeles Co.	12- 2-15	6,238	suspended
Westwood Oil Co., No. 2 Hermosa, Los Angeles Co.	6- 4-14	2,151	cleaning out
Baxter Pet., No. 1 Hermosa, Los Angeles Co.	5- 4-14	mtl.	building rig
Staple Oil Co., No. 1 Manhattan, Los Angeles Co.	24- 3-15	2,700	suspended
Pacific Shore Oil Co., No. 1 Lawndale, Los Angeles Co.	20- 3-14	rig	suspended
Smith, J. O., No. 1 Lawndale, Los Angeles Co.	20- 3-14	rig	suspended
Wilmington Consd., No. 1 Watson, Los Angeles Co.	17- 4-13	1,012	suspended
Ranger Pet. Co., No. 1 Watson, Los Angeles Co.	21- 4-13	mtl.	building rig
Pedro Pet. Corp., No. 1 San Pedro, Los Angeles Co.	14- 5-14	rig	suspended
Brubaker, W. O., No. 1 Van Nuys, Los Angeles Co.	11- 2-15	2,700	suspended
Rucker & Croul, No. 2 Puente, Los Angeles Co.	27- 2-10	2,200	suspended
El Dorado Oil Co., No. 1 Puente, Los Angeles Co.	20- 2- 9	2,110	suspended
Cudahy Oil Co., No. 1 Bell, Los Angeles Co.	30- 2-12	1,370	suspended
Jones, W. L., No. 1 Bell, Los Angeles Co.	31- 2-12	rig	suspended
Weist Oil Co., No. 1 Montebello, Los Angeles Co.	34- 1-11	4,950	gr. sd. drilling
Blinn & Gray, No. 1 Montebello, Los Angeles Co.	6- 2-11	4,900	gr. sd. drilling
Yellowstone Oil Co., No. 1 Alhambra, Los Angeles Co.	24- 1-13	3,919	suspended
Yellowstone Oil Co., No. 2 Alhambra, Los Angeles Co.	19- 1-13	2,015	suspended
Rucker, L. W., No. 1 Calabasas, Los Angeles Co.	26- 1-17	1,004	br. sh. drilling
Caballero est., No. 1 Calabasas, Los Angeles Co.	23- 1-16	1,260	cemented
Olympic Corp., No. 1 Calabasas, Los Angeles Co.	18- 1-17	5,960	suspended
Simi Oil Co., No. 1 Calabasas, Los Angeles Co.	18- 1-17	2,292	sd. sh. drilling
Marble, Willard, No. 1 Chatsworth, Los Angeles Co.	6- 2-16	311	sd. drilling
Superior Oil Co., No. 1 Newport, Orange Co.	27- 6-10	2,260	sd. sh. drilling
Ajax Pet., No. 1 Newport, Orange Co.	21- 6-10	5,450	hd. sd. drilling
Beck, Alfred, No. 1 Corona, Riverside Co.	8- 4- 6	1,110	suspended
Alberta Oil Co., No. 1 Elsinor, Riverside Co.	35- 2- 2	3,485	suspended
Duncan, N. L., No. 1 Sagebrush, Riverside Co.	8- 4- 6	1,157	suspended
Colan Dev. Co., No. 1 Redlands, San Bernardino Co.	25- 1- 2	2,392	redrilling
Mason Oil Co., No. 1 Salton Sea, Imperial Co.	1-17-15	610	sd. sh. drilling
Borderland Oil Co., No. 1 Encinitas, San Diego Co.	12-13- 4	2,519	suspended
Borderland Oil Co., No. 1 Point Loma, San Diego Co.	30-16- 3	5,124	will test
South Bay Oil Co., No. 1 Border, San Diego Co.	31-18- 2	1,242	suspended
Itasca Pet. Co., No. 1 Mesa, San Diego Co.	33-18- 1	1,570	fishing
Carr, O. K., No. 1 Capistrano, San Diego Co.	12- 6- 8	5,250	suspended
Oklahoma Oil Corp., No. 1 Palma, San Diego Co.	25-11- 8	510	redrilling

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well, location—	S.T.R.	Depth	Status
Western Gulf, No. 1 Santa Maria, Santa Barbara Co.	5- 9-35	7,650	br. sh. drilling
Midwest Oil Co., No. 1 Los Alamos, Santa Barbara Co.	2- 7-35	3,450	suspended
Ohio Oil Co., No. 1 Goleta, Santa Barbara Co.	16- 4-28	4,360	hd. sd. drilling
General Pet., No. 1 Goleta, Santa Barbara Co.	21- 4-28	4,533	gas—shut in
General Pet., No. 2 Goleta, Santa Barbara Co.	21- 4-28	4,350	gas—shut in
General Pet., No. 3 Goleta, Santa Barbara Co.	21- 4-28	6,912	cemented
General Pet., No. 133 Goleta, Santa Barbara Co.	21- 4-28	2,030	suspended
General Pet., No. 134 Goleta, Santa Barbara Co.	21- 4-28	2,053	suspended
General Pet., No. 136 Goleta, Santa Barbara Co.	21- 4-28	2,047	suspended
General Pet., No. 137 Goleta, Santa Barbara Co.	21- 4-28	2,050	suspended
General Pet., No. 138 Goleta, Santa Barbara Co.	21- 4-28	4,931	suspended
General Pet., No. 139 Goleta, Santa Barbara Co.	21- 4-28	2,051	suspended
Bowles Oil Co., No. 140 Goleta, Santa Barbara Co.	21- 4-28	2,065	suspended
U. S. Pet., No. 141 Goleta, Santa Barbara Co.	20- 4-28	2,004	suspended
U. S. Pet., No. 142 Goleta, Santa Barbara Co.	20- 4-28	2,012	suspended
U. S. Pet., No. 143 Goleta, Santa Barbara Co.	20- 4-28	2,010	suspended
El Camino, No. 149 Goleta Tideland, Santa Barbara Co.	22- 4-28	2,010	suspended
Bellview Oil Co., No. 159 Goleta, Santa Barbara Co.	24- 4-29	2,099	suspended
Cochran, J. H., No. 1 Naples, Santa Barbara Co.	7- 4-29	5,134	suspended
Strickland & Tippett, No. 1-A Goleta, Santa Barbara Co.	19- 4-27	4,880	sd. sh. drilling
Sovereign Oil Co., No. 1 Guadalupe, Santa Barbara Co.	20-10-35	5,500	suspended
Pacific Western, No. 1 Gibraltar, Santa Barbara Co.	14- 5-27	2,345	suspended
Associated, No. 1 Rincon Creek, Ventura Co.	19- 4-24	2,080	suspended
C. C. M. O. Co., No. 2-A Rincon, Ventura Co.	23- 3-24	7,825	170 bbls. daily
Continental, No. 1 Rincon, Ventura Co.	23- 3-24	6,640	new field
Bell, H. H., No. 1 South Mountain, Ventura Co.	22- 3-21	848	cleaning out
Pure Oil Co., No. 1 S. F. Canyon, Ventura Co.	15- 4-21	2,591	suspended
San Pedro Oil Co., No. 2 Sespe, Ventura Co.	13- 4-21	3,500	hd. sd. drilling
Magu Synd., No. 1 Oxnard, Ventura Co.	17- 1-21	5,002	suspended
Mex Cal Oil Co., No. 1 Conejo, Ventura Co.	12- 1-20	240	suspended
Graham & Loftus, No. 1 Goose Lake, Kern Co.	20-27-22	3,100	br. sh. drilling
Wilshire Oil Co., No. 1-A Buttonwillow, Kern Co.	7-29-24	7,000	suspended
Milham Expl. Co., No. 6 Buttonwillow, Kern Co.	8-28-23	3,200	hd. sd. drilling
Calif. Oil Producers, No. 2 McKittrick, Kern Co.	30-30-22	6,650	br. sh. drilling
Purman, T. H., No. 1 McKittrick, Kern Co.	22-29-21	501	sd. drilling
Federal Drlg. Co., No. 1 Buena Vista, Kern Co.	20-31-24	5,367	suspended
General Pet., No. 1 Beiridge, Kern Co.	30-28-21	6,875	br. sh. drilling
Wallace, K. C., No. 1 Beiridge, Kern Co.	32-29-21	4,222	suspended
Rio Cal Pet., No. 1 Shale, Kern Co.	2-27-18	2,355	suspended
Wicker, Sy., No. 1 Arvin, Kern Co.	12-30-28	3,803	suspended
Shell, No. 1 Weed Patch, Kern Co.	29-30-29	5,910	suspended
Osborn, Colter, No. 1 Weed Patch, Kern Co.	15-30-29	3,465	suspended
Osborn, Colter, No. 2 Weed Patch, Kern Co.	15-30-29	2,000	cleaning out
Mohawk Oil Co., No. 1 Weed Patch, Kern Co.	32-30-29	6,150	suspended
Standard, No. 1 Devils Den, Kern Co.	14-25-18	1,600	suspended
Cumberland Oil Co., No. 2 Devils Den, Kern Co.	21-26-18	2,610	br. sh. drilling
Signal Oil Co., No. 1 Blackwell Corner, Kern Co.	15-26-19	106	tech. spud.
United Kern Pet., No. 1 Mojave, Kern Co.	26-10-14	1,065	suspended
Meridian Oil Co., No. 1 Mojave, Kern Co.	11- 9-15	3,830	cleaning out
Kendall Dev. Co., No. 1 Mojave, Kern Co.	27-11- 9	760	hd. sd. drilling
Harding, J. B., No. 1 Mojave, Kern Co.	5-10-10	1,030	redrilling
Ritchie, J. J., No. 1 Tejon, Kern Co.	33-11-19	6,025	suspended
Associated, No. 1 Jacalitos, Fresno Co.	22-21-15	6,197	suspended
Panorama Oil Co., No. 1 Carrizo, San Luis Obispo Co.	7-31-21	4,019	suspended
Kent & McDonald, No. 1 Carrizo, San Luis Obispo Co.	3-32-22	2,031	suspended
Trav-El Oil Co., No. 1 Carrizo, San Luis Obispo Co.	7-32-22	2,450	cleaning out
Paso Robles Synd., No. 1 Paso Robles, San Luis Obispo Co.	34-27-11	4,040	suspended
Cent. Coast Inv., No. 1 Atascadero, San Luis Obispo Co.	1-28-12	411	sd. sh. drilling
Schilling, C., No. 1 Atascadero, San Luis Obispo Co.	24-28-12	1,475	suspended
Pacific Inland, well No. 1, Monterey Co.	19-23-15	1,345	suspended
Brown, W. F., No. 1 Parkfield, Monterey Co.	15-23-14	1,051	suspended
Guess, W. G., No. 1 Monocline, King Co.	7-21-21	4,620	resume work
Lacal Gas Co., No. 1 Dudley Ridge, Kings Co.	32-22-20	mtl.	building rig
Irma Inv. Co., No. 1 Dudley Ridge, Kings Co.	7-23-20	1,345	gas well—idle
O'Donnell, J. E., No. 1 Dudley Ridge, Kings Co.	7-23-20	1,635	gas well—idle
Eagle Oil Co., No. 1 Dudley Ridge, Kings Co.	15-23-20	rig	suspended
Kettleman Lakeview, No. 1-A Dudley Ridge, Kings Co.	20-23-20	1,095	cleaning out
Knudsen & Schmidt, No. 1 Reef Ridge, Kings Co.	36-23-17	4,315	recemented
Seymour, L. W., No. 1 Avenal, Kings Co.	10-23-16	1,148	suspended
Twin State Oil Co., No. 1 Point Arena, Mendocino Co.	14-12-17	7,603	hd. sd. drilling
Orinda Pet., well No. 1, Contra Costa Co.	32- 1- 3	2,120	redrilling
Ducor Pet. Co., No. 1 Ducor, Tulare Co.	14-24-27	2,200	suspended
Inland Valley Oil Co., No. 1 Visalia, Tulare Co.	24-17-24	2,092	suspended
Ellis & Stanford, No. 1 Tulare Lake, Tulare Co.	20-24-23	1,602	sd. sh. drilling
Colusa Oil Co., No. 1 Bush, Colusa Co.	31-15- 4	953	hd. sd. drilling
Oakdale Oil Co., No. 1 Oakdale, Stanislaus Co.	3- 2-10	4,199	hd. sd. drilling
Orland Oil Synd., No. 1 Orland, Tehama Co.	31-23- 3	2,520	redrilling

Pickup Expected in Central West Field

Dozen Completions in Central Ohio, Three Oil Producers. Wildcat Work in Indiana. Kentucky Gets Good Well, Michigan Another

By George A. Whitney
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Oct. 12.—Development work has been slack in most divisions of the Central West Field so far as completions are concerned, but indications are for a pick-up. Central Ohio is holding its own, and Indiana has a few completions, while the Lima and Illinois areas make rather poor showings. Michigan had only a couple of wells for the week, but Kentucky is showing a pick-up in some of the western counties. Indiana comes in with half a dozen wells, none, however, being oil producers, four being dry and two were gas producers.

In the old Lima Field of northwestern Ohio, but one completion was reported, the Wiser Oil Co.'s No. 3 Jacob Steiner farm, Section 13, Cessna Township, Hardin County, which found a Trenton Rock pay from 1,369-76 feet, showing around 50,000 feet of gas and about 3 bbls. of oil. Same company is drilling No. 5 on the Grant Geiger farm, Section 12, same township, and also drilling No. 1 on the Grant Geiger No. 2 farm, in Section 13. Kurtz Gas Co. failed to find any pay at a depth of 1,310 feet in No. 1 William F. Kurtz farm, Section 20, Jackson Township, same county.

In Wyandot County, O'Neal and others have a rig on the John Neiderkoker farm, Section 1, Crawford Township. Same parties have a rig on the Jacob Fruth farm, Section 7, Tymochtee Township, same county.

Lake Shore & Western Metal Co. is doing considerable test work in the Lima Field, and expects to test a large area from Grand Rapids in Wood County to the southwest as far as Logan County, in hope of finding a worthwhile gas-producing area. This company is drilling on the Robert S. Patterson, Section 6, Washington Township, Logan County, and a test on the L. M. Jones farm, Section 5, Richfield Township, Henry County. Recovery Oil & Gas Co. is drilling on the J. A. and H. G. Haines farm, Section 31, Seneca Township, Seneca County.

CENTRAL OHIO

A dozen completions were reported in the Central Ohio Field of which 3 were oil producers with an initial production of 51 bbls., 5 were dry holes and 4 were gas wells, while in new work under way, there were 11 wells spudding and 12 locations made, a total of 23, indicating the drilling will continue in the field as usual.

In Lorain County, the Ohio Fuel Gas Co.'s No. 1-5556 Henry E. Cleteer farm, Lot 67, Columbia Township, is a light gas producer. Daugherty & Dempsey made a location on the Jess and Anna Lewis farm, Section 15, Avon Township, same county.

In the Chatham Pool, Chatham Township, Medina County, Edson Sons Co. struck a 50-bbl. initial producer in No. 27 on the Marcus A. Frank farm, Section 20 at 403-501 feet, while No. 28 same farm, failed to find any sand and is a dry hole. Same company's No. 20 George W. Packard farm, Lot 4, same township, was dry from 345-65 feet. The Preston Oil Co. made locations for Nos. 19 and 20 on the C. and E. Clapp farm, Section 5, same township.

In Wayne County, Chester Township, Hulse & Kundtz found a dry hole in No. 3 on the W. A. Firestone farm, Section 19, in the Clinton lime from 3,049-64 feet.

In Richland County, Worthington Township, the Ohio Fuel Gas Co.'s No. 1-5359 Leah Cleve farm, Section 15, failed to find any sand and is dry.

In Muskingum County, the Atha Co. is drilling a second test on the Stark Land Co. farm, Section 10, Washington Township.

In Athens County, Carthage Township, Hope Construction & Refining Co.'s No. 2 Ida B. Davis farm, in fractional Section 18, is showing for a 2-bbl. well in the Berea at a total depth of 1,687 feet. Nelsonville Gas Co. made a location on the John Ward farm, Section 5, York Township.

In Fairfield County, Pleasants Township, the City Natural Gas Works has a light gas well in No. 5 S. H. Anderson estate, Section 21, at a total depth of 2,302 feet.

In Knox County, Hulse & Kundtz, Inc., are drilling No. 4 J. H. Colopy farm, Section 22, Union Township. Whitehill Oil Co.'s test on the J. and P. Allen farm, Section 3, Jackson Township, same county, is dry from 2,952-63 feet.

In Guernsey County, W. B. Urban and others are drilling No. 2 on the John Brock farm, Sections 13 and 14, Jackson Township.

In Belmont County, Somerset Township, Bradfield & Hardwick have a fair gas well in No. 1 A. and J. Burkhart farm, Section 32, in the Salt sand from 1,034-35 feet. Teller and others' No. 4 F. S. and Nellie Rossiter farm, same township, is reported showing for 1 bbl. in the Berea sand at 1,829 feet. Burbacher and others are drilling No. 1 James Butler farm, Section 31, and the Central Gas Co. has a rig on the Grover Parks farm, Sections 14 and 15, same township.

INDIANA

The drill failed to bring forth any new oil production in Indiana, but considerable wildcat work is now under way, mostly for gas. James C. Ellis, Kentucky operator, drilled in a light gas well on the Mary Drake farm, Section 29, Curry Township, Sullivan County. C. W. Scott's No. 5 on the C. L. Davis No. 2 farm, Section 14, Turman Township, same county, is reported a dry hole.

I. A. Polhamus drilled a test on the William Grass farm, NE. Section 11, Huff Township, Spencer County, in the extreme southern part of the State, and it was dry. No. 2 same farm, is drilling. Wayne Gale is drilling on another Grass farm, in the same vicinity.

In Knox County, James H. Gardner's test on the E. W. House farm, NW, Section 16, Busseron Township, 660 feet from the north and west lines of the lease, came in a dry hole. J. E. Young is drilling on the Floyd Wilson farm, Section 3, Harrison Township, same county.

KENTUCKY

The outstanding completion in the Kentucky Field was the bringing in of a well showing better than 100 bbls. initially, by Miller & Damron, in their No. 3 on the Dunn farm, in the Barret Hill Pool, in McLean County, near the Daviess and Ohio County lines in the northern area of McLean County. This well, according to advice, will not be connected to the pipe line, due to the present low price of crude.

After a shutdown period of many weeks, during which only a small amount of oil was pumped in the Owensboro Field, including Ohio, Hancock and Daviess Counties, activity has been resumed to such an extent as is held warranted by the present low price of crude. While the production during the shutdown was said to be close around 1,000 bbls. a day, the present production of the field is estimated by pipe line officials at between 6,000 and 8,000 bbls. daily. Practically all of the operators are said to have resumed pumping since the price was brought up to 75 cents a barrel from 35 cents, the lowest price

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Fair Oil Producer in West Virginia

Two Small Wells in Southeast Ohio, One Gas Well and a Dry Hole. Calhoun County Continues Very Active in Gas Operations

By Staff Correspondent

PITTSBURGH, Pa., Oct. 12.—The week was fairly dull in the three districts of the eastern field with resulting few completions. In Southeast Ohio, two small producers, one gas well, and one dry hole constituted the week's work. West Virginia had a somewhat larger total, with four gas wells, and two new oil wells, one of which was a fair producer. In Southwest Pennsylvania there was but one new gas well added. The totals were four oil producers, with an initial production of 57 bbls., six gas wells and one dry hole.

Southeast Ohio

In Southeast Ohio the largest gas well for the week was a 250,000-foot well, a test by the Ohio Fuel Gas Co. on the Phasa Throckmorton farm, near Bollins Mill, Section 4, Knox Township, Vinton County. It was drilled to 1,076 feet and in the Grit. In Section 14, Palmer Township, Washington County, F. M. Russell, and others completed a third well on the Alexander Martin farm through the first Cow Run sand and to 580 feet. It proved to be a dry hole.

In the southeast quarter of Section 4, Island Creek Township, Jefferson County, the N. A. Sutton Oil Co. completed a second test on the W. J. Lee farm, about 500 feet northeast of the test on this farm. It was completed in the Berea sand at 1,350 feet, which produced 1 bbl. the first day after shot. In the prolific shallow drilling in Medina County, the Oko Oil & Gas Co. renewed operations with a third well on the Katie Fitzer farm, Lot 1, Section 1, Chatham Township. It made 5 bbls. the first day after being shot in the sand at a depth of 470 feet.

Drilling in Ohio

In Knox County, M. F. Whitehill is drilling on the James Allen farm, Section 3, Jackson Township. The well is below the 3,000-foot level and is scheduled for the Clinton sand. In Noble County, the Permian Oil & Gas Co. has rigged up for a test on the C. I. McKee farm in Section 13, Olive Township. In Washington County operations are considerably reduced. In Section 8, Liberty Township, Otto Heldman and others are down past 1,000 feet on the Henry Hift farm. In Athens County, the Standard Natural Gas Co. is drilling a second test on the R. Young farm in Section 12, Waterloo Township.

In Carroll County, four wells are drilling. Eaton and others have one drilling on the Nelson E. Slates farm in Louden district, and close by one on the Jennie Chase farm. In the same district, George W. Elliott and others have a third well drilling on the H. G. Buchanon farm. In Center district, the Lisbon Oil & Gas Co. and others have No. 4 drilling on the James M. Hanna farm.

WEST VIRGINIA

The West Virginia fields remained quiet with but one enlivening feature, a fair oil producer being brought in. In Harvey district, Mingo County, F. H. Yates drilled his test on the Herman Stroud farm 211 feet deeper from the Keener sand and in the Big Lime sand and to a total depth of 1,936 feet. It produced 50 bbls. the first day from that formation with a yield of a peculiarly black Pennsylvania crude. The well is about 2,200 feet north of the same operator's test on the Cowden and Workman farm. A second producer for the week was the old No. 2,190 of the Manufacturers Light & Heat Co. on the A. and M. E. Jolliffee farm in Clay district, Wetzel County. This well was drilled deeper to 3,116 feet and will be a light producer.

None of the gas wells reported during the past week was of any considerable size. In Center district, Calhoun County, C. A. Jarvis and others completed a test on the M. E. Freshour farm in the Injun sand and have a small gas well. In Gilmer County the McCall Drilling Co. completed a third well on the Fletcher H. Stout farm in Center district. It went to 1,823 feet and in the Injun sand and will make a light gas well.

In Marshall County, Frye and McCracken drilled their No. 2 on the John McGinnis farm in Cameron district deeper from the Salt sand to the lime with a resultant increased flow. This well originally made a considerable flow of gas from the first or Salt sand. In Kanawha County, the Winifrede Co. completed a test on the J. A. Thomas farm in Elk district and it is showing for about 150,000 feet a day.

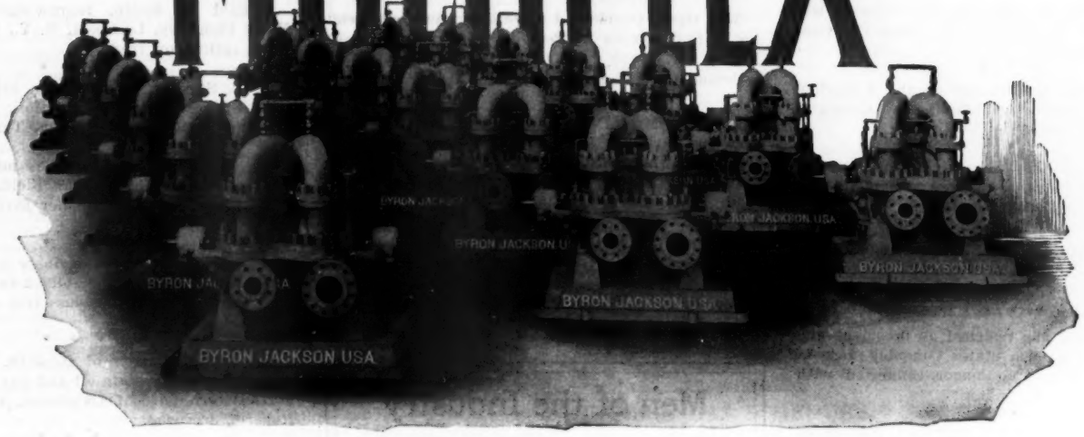
Drilling in West Virginia

The deep test of the United Fuel Gas Co. on the J. W. Hinzman farm in Curtis district, Roane County is now drilling at 7,630 feet, a depth which now approaches the deepest in the eastern fields. In the same district, the Reedy Oil & Gas Co. is rigging up for a second test of the A. J. Paugh farm. In Spencer district, J. P. Young and others are down 1,594 feet on the Holly Walker farm, and have the materials hauled in for a test on the Dan Connaly farm. In the same section, George Smith and others are getting the materials on the ground for a test on the C. A. Kendall farm. In Spencer district, the Ohio Valley Gas Corp. is preparing to drill No. 15 on the R. M. Jennings lease. In Reedy district, the Heck Oil Co. is getting ready to drill No. 5 on the H. W. Allen farm.

Calhoun County continues very active

(Continued on Page 65)

MULTIPLEX



19 Byron Jackson Pumps for Phillips Pipe Line

WHEN the Phillips Pipe Line Company inaugurates service on its sensational 750 mile gasoline line from Borger, Texas to St. Louis, Byron Jackson Multiplex Pumps will be employed. The seven pumping stations along the line will be equipped with 19 Byron Jackson 4"4-stage Multiplex oil line pumps. At each station two of these pumps operating in series will deliver 30,000 barrels per day against a total pressure of 750 pounds per square inch. The pumps will be driven by gasoline engines through reduction gears, operating at a speed of 3450 RPM. At each station a third pump will be used for stand-by service.

On completion of the witness tests, all pumps having exceeded their guaranteed efficiency, the Phillips Pipe Line Company expressed great satisfaction with both performance and mechanical design of the units.

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Personal Paragraphs About Oil Men

J. L. Dittman, of the Wall Rope Works, Inc., is in East Texas for an indefinite stay on company business.

• • •

L. A. Wainwright, geologist with the Amerada Corporation at San Angelo, Tex., visited San Antonio last week.

• • •

R. D. Gibbs has succeeded R. W. Garman, who recently resigned as chief of the Union Oil Company's gas department.

• • •

Frank Carr, who has charge of the Longview, Tex., branch of the Leland Equipment Company, was in Tulsa last week.

• • •

A. J. Miller, who has been living in Houston, Tex., the past few years, has moved to San Antonio, being interested in Zapata County.

• • •

A. J. McColl, Mid-States Oil & Gas Company, has opened offices in San Antonio, Tex. Mr. McColl was interested in the Oklahoma City Field.

• • •

Walter E. Hopper has resigned as president and a director of the Southern States Company, Inc., of Shreveport, La., and is no longer connected with the company.

• • •

C. E. Dobbin, G. H. Cronin and Ray Waters, of the U. S. Geological Survey, are doing some geological work in the Kutz Canon area in San Juan County, New Mexico.

• • •

Charles E. Robinson, drilling superintendent of the Seahawk Petroleum Company, has been elected vice president of that company, succeeding Edward Vallew, who recently resigned.

• • •

James B. Diggs, chief counsel of the Gypsy Oil Company, Tulsa, is recovering from illness at Johns Hopkins Hospital, Baltimore, Md. He left Tulsa during the week after an attack of ptomaine poisoning.

• • •

Mr. and Mrs. George Bryson have left Petrolia, Ontario, for Regina, Saskatchewan, where they will spend some time before returning to Miri, Sarawak, where Mr. Bryson is on the staff of the Royal Dutch-Shell Oil Company.

• • •

Prof. J. C. McLennan, head of the physics department of Toronto University, is leaving that institution to make his home in Surrey, England. Doctor McLennan has been active in helium research and during the war was scientific adviser to the British Admiralty.

• • •

John Fertig, of Independence, Kans., vice president and general manager of the Producers & Refiners Company, with P. C. Spencer, general counsel for the Prairie Oil & Gas Company, and Glen M. Ruby, president of the Nordon Company, visited Edmonton and Calgary, Alberta, recently.

• • •

Roy L. Cronise, dispatcher and director of the South West Pennsylvania Pipe Lines, with headquarters in Pittsburgh, Pa., recently returned from an automobile trip to Homer and Shreveport, La., where he was the guest of Jo Gordon of the Standard Oil Company of Louisiana, and where several days were spent in the field. Mrs. Cronise accompanied her husband.

• • •

Charles Lawrence Baker, formerly chief geologist of the Rio Bravo Oil Company, Houston, Tex., has accepted a position with the Bureau of Economic Geology at Austin, Tex. Mr. Baker has been widely known to the geological profession for his efforts to advance the science of geology. The geological department of the Rio Bravo Oil Company now is under the direction of J. M. Vetter, who has been in consulting practice with W. F. Bowman the past two and a half years.

C. C. Chamberlain, of the Tulsa office of the Frick-Reid Supply Corporation, has returned from a business trip to Chicago, Ill., and Pittsburgh, Pa.

• • •

R. W. Garman, manager of the gas department of the Union Oil Company of California, resigned effective October 1 to engage in consulting practice.

• • •

Mrs. Gerry Currie and three daughters are spending a few months in Petrolia, Ontario, before rejoining Mr. Currie, who is on the International Petroleum Company staff in Peru.

• • •

Mr. and Mrs. Peter Stauft and son who have been on furlough in Petrolia, Ontario, have left for Peru, where Mr. Stauft will rejoin the International Petroleum Company staff.

• • •

Gardner Blackman, secretary to Louis D. Jurs, vice president of the Associated Oil Company, has left on a vacation trip to Florida but is expected to return to the Associated's home office in San Francisco on October 15. Mr. Blackman is expected to bring back two small alligators on his return.

Men of the Industry

L. C. Decius

L. C. Decius, chief geologist and manager of the land department of the Associated Oil Company, was born in Cumberland County, Illinois, February 10, 1890. After one year at the University of Southern California he completed his college career at Stanford University, where he majored in geology and received his A.B. degree in 1913.

Mr. Decius then went to South America where he was engaged for two years in exploration for oil and mineral resources in Argentine for the Argentine government. In 1915 he was appointed geologist for the Ministry of the Interior, Argentine Republic. In the latter part of that year he returned to this country and joined the geological staff of the Southern Pacific Company. From 1916 to the present time Mr. Decius has been engaged almost entirely in geological and petroleum engineering work, and has served successively as geologist, assistant chief geologist and chief geologist. He was appointed by the Associated Oil Company to the last-named position in February, 1929. A year later he took over the duties of manager of the land department.

For many years Mr. Decius has been a member of the American Association of Petroleum Geologists and at the meeting of this association in San Antonio, Tex., in March, 1931, he was elected first vice president. He is a member of the American Institute of Mining and Metallurgical Engineers.

A. E. Butts, of the Tulsa office of the A. O. Smith Corporation, is recovering at home from a month's illness.

• • •

O. Berg, Jr., has been appointed assistant district manager of sales for the Union Oil Company at San Francisco, Calif.

• • •

Donald G. Smith, representative for Western Block Company, Lockport, N. Y., was in Tulsa last week calling on trade.

• • •

E. L. Stevens, of the Tulsa office of the Wickwire Spencer Sales Corporation, has left for San Antonio, Dallas and Houston, Tex.

• • •

Col. Robert W. Stewart has made a tour of inspection of the East Texas Field, accompanied by K. L. Wickett, of the Premier Investment Company, Fort Worth, Tex.

• • •

W. B. Rawson, sales engineer of the Maintenace Engineering Corporation, 1400-2 Conti Street, Houston, Tex., left on a business trip covering Tampico and Mexico City.

• • •

Sam F. Wilkerson of Nowata, Okla., has been appointed deputy state oil and gas inspector for the northeastern part of Oklahoma, succeeding W. E. Roberts, deceased.

• • •

H. W. Wickstrom has resigned as assistant chief engineer of the Associated Oil Company in order to engage in private practice as a consulting engineer with headquarters in Los Angeles.

• • •

Harry W. Schuetz, of the Pittsburgh Screw & Bolt Company, Pittsburgh, Pa., is on a trip through the Mid-Continent oil fields. He is at present in Texas and will visit Tulsa later in the month.

• • •

W. C. Franklin, former vice president and counsel of the Tidal Oil Company, and a director of the American Petroleum Institute, has opened offices in the Hunt Building, Tulsa, as an attorney-at-law.

• • •

Sir Francis Goodenough, executive chairman of the British Commercial Gas Association, who is on his first visit to the United States, addressed the American Gas Association at its annual convention in Atlantic City, N. J.

• • •

T. Mell Magee, retired superintendent of the South West Pennsylvania Pipe Lines, passed through Pittsburgh, Pa., this week, after having spent several weeks undergoing treatment for an ailment in Columbus, Ohio. For the next few weeks, Mr. Magee will remain at his home at Keister, Pa.

• • •

R. R. Crippen, of The Texas Company's Los Angeles office, has succeeded W. W. Robinson, Jr., as a member of the fundamental analysis committee of the California Natural Gasoline Association. Mr. Robinson was recently transferred to the research department of The Texas Company in New York City.

• • •

Dr. W. R. Calvert, consulting geologist, San Antonio, Tex., has gone to Cuba to do some research work in one of the provinces. His address is Pinar del Rio, Cuba. Doctor Calvert was at one time connected with the U. S. Geological Survey and more recently was chief geologist for the Grayburg Oil Company at San Antonio. He will be in Cuba for two months or more.

• • •

Jerry E. Stillwell, assistant to Carl A. Young, director American Petroleum Institute, Dallas, Tex., has just returned from his vacation trip to north central New Mexico where he spent nearly two weeks camping and fishing. He tells a story about mountain pack rats filling the space between engine and hood in his motor car so full of aspen twigs and dried leaves that his engine would not run until the nests were removed.

Natural Gas Industry Developments

OKLAHOMA CITY VOTE TO BE HELD OCTOBER 27

Oklahoma City will vote Tuesday, October 27, on renewing the Oklahoma Natural gas franchise ordinance passed by the city council.

The rates for residential gas service are as follows:

First 100,000 feet per customer per month 45 cents per thousand.

All in excess of 100,000 feet per customer per month 18 cents per thousand.

The rates for industrial gas service shall be as follows:

First 100,000 feet per customer per month 35 cents per thousand.

Next 1,900,000 feet per customer per month 15 cents per thousand.

Next 2,000,000 feet per customer per month 12 cents per thousand.

Next 6,000,000 feet per customer per month 11 cents per thousand.

Next 20,000,000 feet per customer per month 10 cents per thousand.

When the gas consumption per month exceeds 30,000,000 feet the rate of 10 cents per thousand shall apply to all gas consumed during said month.

No penalty or additional charge shall be made for nonpayment of bills by the fifteenth day of the month following service of gas, but the above rate shall be net to the consumer.

The franchise, which is not exclusive, would run for 25 years.

Employes of the Oklahoma Natural Gas Corp. are making a canvass of homes in Oklahoma City to determine how the public regards the company's application for the new franchise, W. P. Canavan, vice president, said.

Each employe is canvassing the precinct in which he lives, and a general canvass is being made by service men. Mr. Canavan said the issue was clearly defined in the forthcoming election as only the question of granting a new franchise at a 45-cent domestic rate was involved. Employes engaged in the canvass are not authorized to discuss any other prospective bidder for a franchise here, nor municipal ownership of the gas distributing plant, Mr. Canavan said.

JUDGE RECONSIDERS CASE

HELENA, Mont., Oct. 10. — Judge William H. Sawtelle, of the Circuit Court of Appeals for the Ninth Circuit, has filed in the District Court for the District of Montana a reversal of his previous dissent from the decision of District Judges George M. Bourguin and Charles N. Pray in the Shelby gas case.

In a suit brought by the Great Northern Utilities Co. against the Public Service Commission of Montana, Judges Bourquin and Pray held that the commission's order fixing minimum rates for gas service rendered in Shelby by the Great Northern was invalid, although the statute under which the order was issued was held to be valid. Judge Sawtelle agreed that the statute was valid and held that the order likewise was legal.

"Upon maturer reflection," he stated in the opinion reversing his former position, "I have reached the conclusion that the order is invalid."

He said he found that the law upon which the order is based is sustained by the constitutions of both the nation and the state, but that the order itself is invalid because it does not permit a fair return to the utility.

LOCUST GROVE FRANCHISE

Citizens of Locust Grove, Okla., by a vote of 56 to 5, have granted a natural gas franchise to the Braman Oil Co. of Tulsa. Work is scheduled to start at once.

RULES PROPOSED FOR RATABLE TAKINGS OF GAS IN TEXAS FIELDS

AUSTIN, Tex., Oct. 12. — Rules and regulations designed to bring about the enforcement of the natural gas provisions of the Davis-Pollard pipe line bill with relation to the ratable purchase of natural gas, were presented to R. D. Parker, chief oil and gas supervisor of the Railroad Commission, by representatives of operators purchasing and producing gas in Texas.

The hearing was a continuation of one held here September 28 and the proposed rules submitted were the result of conferences held between producers and purchasers. An agreement was reached between all factions on all rules except that which governs the length of time a connection shall remain on a well after the purchaser has made his connection.

The Railroad Commission will pass on the adoption of the rules proposed by the representatives of the gas producers and purchasers and Mr. Parker.

The producers expressed a desire to force common purchasers to connect to any well and take their gas ratably with the other production of the common pool, reserving a right to disconnect from one purchaser and sell to any other willing to pay a higher price. The common purchasers contended they should be assured of the connection for several years, pointing out that the laying of gathering lines and the installation of other connections is expensive and that such operations would result in a loss rather than profit unless they have the assurance of production from the particular well over a period of at least five years.

Producers of the Panhandle area insisted that the market for gas from that field still is undeveloped, although a monopoly of the market now exists in that area. Contracts made under present marketing conditions, they said, would tie up wells for several years, during which they have every reason to believe that conditions leading to a better market price for natural gas will come about.

The first of the 11 rules proposed requires that there shall be no discrimination between the producers of any pool who are offering gas of the same grade as that already handled by the purchaser, and further requires that all wells which come within this limit shall share in the market of that pool. The second rule likewise applies to ratable purchases.

The right of the Railroad Commission to issue special rules governing ratable taking from any specified field in the state, which rules shall have precedence over the general rules, is reserved in the third rule.

Rule 4 requires the purchaser to install all connections up to and including the meter on each well, but that other connections shall be furnished by the producer.

Rule 5 requires the producer to furnish a certificate from the Railroad Commission specifying that he has completed the well within the conservation regulations of the commission. The connection must be made and production carried, pending the receipt of such a certificate from the commission.

Marketable gas is defined in Rule 6 as gas in its natural state, free from liquids, corrosive substances or other foreign matter. However, if the purchaser is running any other gas, either from his own wells or purchased from another producer in the same common pool, which is of an inferior grade according to this definition, he must purchase ratably similar gas from other producers in the same common pool.

Gas involved in litigation, according to Rule 7, shall be accepted by the purchaser, but payment may be held in escrow in lieu of an indemnity bond until the producer furnishes an abstract of title to the production.

Purchasers who are running only dry, casinghead or residue gas can not be forced to accept either of the other two classes. An effort was made by J. W. Cowles of the Shell company to force purchasers to take residue gas in preference to all other types when it was tendered for sale. This move was protested by the larger purchasing companies.

Rule 9 requires purchasers to permit the gas of other producers, tendered for purchase, to pass through treating plants which the purchasing company is operating for its own gas, but does not require the purchaser to install such equipment where it does not already exist. Rule 10 also governs this phase.

Rule 11 specifies that the unit of marketable gas shall be computed at a base pressure of two pounds above an assumed atmospheric pressure of 14.4 pounds, a standard base and flowing temperature of 60 degrees.

REVISED GAS SCHEDULE FILED FOR CHICAGO

CHICAGO, Oct. 12.—The Peoples Gas Light & Coke Co. has filed with the Illinois Commerce Commission a revised schedule of rates for gas service in Chicago, in accordance with the commission's order proposing a reduction of approximately 6½ per cent of the company's general rate and 31 per cent in the house heating rates.

"The commission has advised us that it wanted to experiment with the new rates," said Samuel Insull, chairman of the Peoples company. "I am willing that the experiment be made. If the new schedule does not prove economically sound, I assume it will be changed. Until that is determined, I would like to have the consumers receive the benefit."

As specified by the commission, the new rates will be effective October 15.

The rate schedule takes the place of that filed by the Peoples company August 26 which provided for a reduction of 3½ per cent in the general rate for gas service, and a reduction of 22 per cent in the house heating rate.

The commerce commission ordered the Public Service Co. of Northern Illinois, which serves suburbs of Chicago, to reduce its rates approximately 5 per cent and its rates for house heating approximately 30 per cent.

Previously when asking permission to supply a mixture of natural and manufactured gas the Chicago Gas Co. had voluntarily offered to reduce its rates 3½ per cent for domestic use and 22 per cent for heating. The suburban company had offered to make reductions of 2 per cent and 20 per cent, respectively.

TO HEAR RATE APPEALS

AUSTIN, Tex., Oct. 12.—It will be the policy of the Railroad Commission to set for hearing all appeals filed with it by natural gas companies from ordinances passed in cities and towns reducing rates, C. V. Terrell, chairman of the commission, said. Already four appeals have been filed affecting rate ordinances in Wichita Falls, Borger, McLean and Colorado.

The companies claim an agreement was made at a recent meeting of the League of Texas Municipalities that cities and towns would pass ordinances reducing rates without investigation, but the commission has decided to investigate at the hearings of the appeals.

HEARING ON TAKINGS OF GAS IN PANHANDLE

AMARILLO, Tex., Oct. 10. — A two-day hearing was held here before members of the Railroad Commission, represented by former Gov. Pat M. Neff on rules governing ratable takings by pipe lines of gas from the Panhandle Field. Mr. Neff was assisted by Laten Stanberry, engineer for the utilities division of the commission.

In the discussion of the rules as proposed there was only one to which there was serious objection. That was Rule 5 in which bradenhead gas from wells producing oil was exempted from the ratable taking clause of the new law. Don Emery of the Phillips Petroleum Co. brought out that in some cases there were isolated oil wells near the dry gas producing area that produced dry gas as high above the oil strata as 400 feet which could be delivered to the purchasing lines free from any prohibitive element and with a pressure demanded at the pipe line. It was announced that any case of that kind would be taken care of by the Railroad Commission but that in the usual run of bradenhead gas coming from wells producing oil it was impractical to take it.

The five major gas pipe lines taking gas from the area in question are as follows:

The Texhoma Natural Gas Co. with a 24-inch line to Chicago having a capacity of 200,000,000 feet daily.

The Cities Service Gas Co. with a 20-inch line to Kansas City having a capacity of 180,000,000 feet daily.

The Missouri Valley Gas Co. with a 24-inch line to Des Moines and points north with a capacity of 150,000,000 feet daily.

The Panhandle Eastern Gas Co. with a 24-inch line to Indianapolis and extensions to New York City with a capacity of 160,000,000 feet daily.

The Southwest Development Co. with a 20-inch line to Denver, a 16-inch line to Midland, a 6-inch and a 12-inch line to Amarillo all having a total capacity of 290,000,000 feet daily.

The total open flow of the field at this

(Continued on Page 65)

REDUCTIONS IN OKLAHOMA

Lower gas rates were put in force, effective for October gas bills, by the Ponca City Gas Distributing Co. at Ponca City, Newkirk and Kildare. The rate was reduced from 47 cents to 45 cents per 1,000 feet for the first 100,000 feet. The new rates were approved by the Oklahoma Corporation Commission. This is the second voluntary gas rate reduction made by the company this year.

GEORGIA RATE INCREASE DENIED

ATLANTA, Ga., Oct. 12.—The petition of Atlanta Gas Co. and associated companies for a general increase in natural gas rates was denied by the Georgia Public Service Commission. The commission held that the rates now in force yield a fair return on that part of properties of the company now in use. At the same time the commission also ruled against rate increases in 11 other Georgia towns.

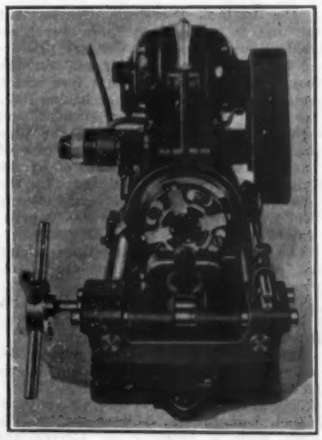
GAS FOR SPARTA, TENN.

SPARTA, Tenn., Oct. 10. — Natural gas was turned into the city mains Wednesday from a well 3 miles north on the Monterey road. Sparta is on Route U. S. 70 and Tenn. No. 1, approximately 100 miles east of Nashville. The depth of the well is about 600 feet, pressure 150 pounds. It is in a coal country. The Sparta Gas Co., a local corporation, has the franchise.

Oil Industry Equipment and Supplies

"TOM THUMB" MACHINE HAS ROTARY DIE HEAD

As a companion to their original "Tom Thumb" pipe and bolt machine, placed on the market last year, the Oster Manufacturing Co. and Williams Tool Corp., Cleveland, Ohio, have announced the new rotary die head "Tom Thumb." The regular pipe capacity of the new machine includes all sizes from one-half inch to 1¼-inch with an extra capacity down to and including one-eighth-inch. The regular bolt capacity is three-eighths-inch to 1¼-inch with an extra capacity of one-fourth-inch, five-sixteenths-inch,



1⅜-inch and 1½-inch. It can be furnished either as a bolt threader or with special equipment to handle nipples.

The manufacturers say that the rotary die head and open-type vise construction permit quicker handling and for that reason the machine is particularly well adapted to either pipe or bolt work. Tests are said to show that the new machine will put a standard thread on 1¼-inch pipe in 18 seconds, and that the actual floor-to-floor time, including chucking, threading, reaming and removing pipe from the machine requires only 30 seconds. On bolt work the total floor-to-floor time is approximately 40 seconds for all sizes within the range.

The unusual compactness of the new "Tom Thumbs" is indicated by the overall dimensions, which are 24 inches high, 18 inches wide and 29 inches long. Its light weight makes it easily portable and it is ready for use the instant it is plugged into a light socket.

The machine is equipped with a stock-stop and an automatic trip which opens the die head when the thread has reached any desired length. A hand trip also is furnished. Driving power is provided by the one-half horsepower universal reversible motor and is transmitted to the machine by means of the VV belt drive.

NEW SHOVEL-CRANE-DRAGLINE

The Link-Belt Co., 300 West Pershing Road, Chicago, has announced the addition of a new shovel-crane-dragline, the K-48, to its line which ranges from three-quarters to 2½ cubic yard capacity. The Link-Belt K-48 is an all purpose unit, serving as a shovel, a crane, a trench hoe or a dragline. It can be furnished with any or all of the attachments which are usually available on smaller machines only. The K-48 is arranged for gasoline engine, Diesel engine, or electric motor drive. The gasoline engine has a heavy duty 130-horsepower rating and the Diesel engine or electric motor is of corresponding capacity.

AMONG THE EQUIPMENT HOUSES

Melvin Sack, formerly connected with the C. H. Wheeler Manufacturing Co. of Philadelphia, Pa., specializing in heat exchangers, has joined the engineering staff of the Henry Vogt Machine Co., Louisville, Ky., assuming charge of the department of heat exchanger design.

The Maintenance Engineering Corp., 1400-2 Conti Street, Houston, Tex., is representing the Timken Steel & Tube Co., Canton, Ohio, and the Associated Alloy Steel Co., Cleveland, Ohio.

R. E. Hession has been promoted to service manager of the Pacific Coast division of the Russell Manufacturing Co. of Middletown, Conn., with offices at 727 Van Ness Avenue, San Francisco.

A. V. Wadsworth, vice president of the Westcott Valve Co., East St. Louis, Ill., has been elected a member of the board of directors of East St. Louis Chamber of Commerce. Mr. Wadsworth is also in charge of the unemployment relief committee in that city.

William T. Bents has been appointed manager of sales of rail steel products, according to a Republic Steel Corp. announcement made by N. J. Clarke, vice president in charge of sales. Republic has mills for the manufacture of rail steel products in Elyria, Ohio, and Moline, Ill.

A second branch of the Bridgeport Machine Co. is being established at Camps, Tex., to serve the East Texas Field. The building already has been erected and the stock is being shipped in. The branch will be in charge of Fred Parks, who is also manager of the Kilgore Bridgeport store. Bridgeport has opened a branch also in El Dorado, Ark., specializing on pumping equipment. This store is managed by A. C. Bramer.

The Rockford Screw Products Co., Rockford, Ill., has been licensed by the Dardelet Threadlock Corp. to manufacture and sell bolts, nuts and screws threaded with the Dardelet self-locking thread. Licenses have been granted also to Wm. Gaskell & Son, Brooklyn, N. Y., Harrison Bolt & Nut Co., Harrison, N. J., and Standard Pressed Steel Co., Jenkintown, Pa.

Herman Merker, secretary of Pressed Steel Tank Co., Milwaukee, Wis., has been placed in charge of market research and development.

BULLET MOTOR DESIGNED FOR DEEP-WELL PUMPING

Designed especially for deep-well pumping service, the construction of the Westinghouse bullet-type vertical hollow-shaft

motors reflects improvements resulting from years of experience in manufacturing vertical motors for a wide variety of applications.

Distinctive features contribute to economical and reliable pumping operations. Water cannot drip into the motor because of its solid-frame, weather-proof hood. A jaw-type clutch protects the equipment from damage in case of power reversals and provides for easy adjustment of the pump shaft. Other features include directed ventilation, liberally designed cartridge-type thrust bearings, dual protected and uniform insulation, interchangeable pre-wound primary core.

This motor is described in an illustrated Westinghouse leaflet 20529, of which copies may be obtained from the nearest district office or direct from the advertising department, Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa.

PROCESS WIDENS USE OF SEAMLESS STEEL TUBING

The Pittsburgh Steel Products Co., Pittsburgh, Pa., a division of the Pittsburgh Steel Co., is taking advantage of the present business situation to launch a program of expansion in its facilities for manufacturing seamless steel tubing. As a first step it has purchased from the Aetna Standard Engineering Co., Youngstown, Ohio, a complete new unit of the push bench type. This is a process not hitherto used in this country in the manufacture of seamless steel tubes, although it employs as a basic principle the method used in the manufacture of steel shell forgings during the war. This application of the forging method gives a high quality of tubing and possesses other advantages including better finish, higher degree of accuracy on the diameter and the wall, and longer lengths. The principal feature of this method is that it will produce tubes of very small diameters by the hot rolled reducing process.

This innovation is expected to enlarge the field of application for seamless steel tubing in the smaller sizes. The product finds its principal outlet in oil country equipment, piping of all kinds, automotive parts, boiler tubes and mechanical tubing generally.

NEW FEDERAL MOTOR TRUCK

Following the introduction of the single-drive three-ton six-wheeler a year ago, the Federal Motor Truck Co., Detroit, Mich., now presents a dual-drive six-wheeler, with six-wheel hydraulic brakes, of the same capacity, available in four and six-cylinder engines. The four-cylinder model is supplied in 140-inch and 164-inch wheelbases; the six-cylinder chassis in 145-inch and 169-inch wheelbases. Aside from the dual drive feature, this new Federal is basically the same as the single drive six-wheeler. It is built as a complete transportation unit, with the dual-drive six-wheel feature designed and engineered into the chassis as an integral part of the vehicle.

MEN KNOWN *in* THE EQUIPMENT FIELD

F. D. Hooper, formerly sales manager of the Lidgerwood Manufacturing Co., Elizabeth, N. J., has been made general sales manager of the Barber-Greene Co.,

F. D. Hooper

Aurora, Ill., manufacturer of material-handling equipment.

Mr. Hooper was born and reared in New York. He received mechanical engineering and electrical engineering degrees at Sibley College, Cornell University, graduating in the class of 1907. He was employed by the Lackawanna Steel Co. (now Bethlehem Steel) and the Boston & Maine Railroad before starting his 24 years of continuous service with the Lidgerwood Manufacturing Co.

PROTECTION FOR PIPE LINES

The American District Steam Co., North Tonawanda, N. Y., after over two years of experimenting and testing, has perfected a protective paint for use on steam and hot water pipe lines. The product has been named Adsco Pipe-Kote 505. According to the manufacturer, it provides several important advantages, in that it is impervious to any degree of heat generated by steam; is practically immune to the action of moisture, dilute acids and alkalis; and it produces an extremely hard, tenacious coating, it is sufficiently elastic to expand and contract with the pipe without cracking or peeling. While Pipe-Kote is especially recommended for use on steam and hot water lines, it is said to work with equal effectiveness on gas and water mains, stacks, boiler fronts, etc.

MARKINGS ARE STANDARDIZED

The Linde Air Products Co., 30 East Forty-second Street, New York, has announced a new standardized set of markings on all Oxweld welding rods. With three exceptions, all rods one-eighth inch in diameter and larger are stamped with the name "Oxweld" as well as the number and type of rod. On the smaller sizes of welding rod where it is not possible to stamp the name, the boxes in which the rod is shipped are plainly marked "Oxweld" with the number and type.

Field Problems and Their Solution

EDITED BY THOMAS F. SMILEY

In order that men connected with the drilling, producing and transporting branches of the petroleum industry may procure quickly a solution of many problems confronting them from time to time in their work, The Oil and Gas Journal has arranged with leading engineers and other recognized authorities to answer questions submitted by readers of this publication pertaining to the work of drilling and producing crude oil and transporting this product.

Everyone is invited to submit questions freely. These questions will be submitted to proper authorities by Mr. Smiley, who edits the page, and answers, based on the best available information, will be published. Each question should give as much detail as possible, especially where it relates to matters where depths of sands, types of sands and operations on adjoining properties would have a bearing on the problem involved. The source of all questions will be considered as confidential and only initials will be published in connection with the question.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or practices which are improvements.

In case an immediate answer is important, one will be given by mail if the writer requests it.

QUANTITY OF OIL IN THE SAND

I am interested in knowing what quantity of oil a given volume of saturated sand will contain. Can you tell me this? —T. G. N.

Prof. H. C. George's book, "Oil Well Completion and Operation," says on this point: "The theoretical amount of oil that a ton of sand of a certain porosity can contain if saturated may be found by computation. For example, 1 ton of oil sand of 10 per cent porosity and fully saturated with oil may contain about 9¾ gallons of oil; a ton of sand of 20 per cent porosity, about 21 gallons of oil; and a ton of sand of 30 per cent porosity, about 34 gallons of oil."

Few sands contain as high a porosity as 30 per cent. Those of East Texas are reported as ranging from 10 to 27 per cent. The average weight of a cubic foot of wet sand is about 125 pounds. There therefore would be about 16 cubic feet to each ton of 2,000 pounds. Sixteen cubic feet will occupy a space slightly greater than 2.5 feet in each dimension, that is 2.5×2.5×2.5 feet equals 15,625 cubic feet.

WANTS BOOK ON GAS LIFT

What technical book on the air or gas lift for producing oil, giving detailed information, would you recommend?—A. D. W.

It is suggested that you obtain a copy of the book written by Robert Stirling and published by Spon & Chamberlain, 120 Liberty Street, New York. This book, called "The Gas Air Lift Pocket Book," sells for $2. There are numerous other books and articles on this subject, but you probably will find Mr. Stirling's book well suited to your purposes.

LIME-SODA ASH SOFTENING

Will you tell me how lime and soda ash are used in softening water for oil-field use; that is, in what proportion they should be introduced and what sort of equipment is needed? Where the water is dirty, but not hard enough to require any softening agent, is it necessary to install some sort of filter or can such water be purified by chemicals? Is a hard water treated with lime or soda ash or with both distinctly better for use in the oil field than one not so treated?—E. W. E.

Treatment of water to purify and soften it for oil-field use requires some knowledge of chemistry and of mechanics. The information for which you ask is contained in a paper prepared under the direction of the A.P.I. Mid-Continent district committee on drilling practice, composed of K. A. Covell, John T. Hayward, C. P. Parsons, A. W. Thompson and W. K. Whiteford. This committee, following an investigation, says that the addition of lime to hard water will reduce the temporary hardness to about two or three grains per gallon and will convert all of the magnesium salts to calcium salts. It will also convert any sodium bicarbonate present into sodium carbonate. If there is any permanent hardness present in the water it will be completely removed by the addition of soda ash. These reactions proceed rather slowly at atmospheric temperatures and are particularly slow in cold weather. The addition of an excess of about one or two grains per gallon of the chemicals will hasten the reactions so that they are nearly completed in 20 to 30 minutes. The precipitate formed settles rather slowly so that a tank having a four-hour holding capacity is ordinarily required for this method of softening and it is not unusual to use tanks of six to eight hours' capacity. The addition of sodium aluminate completes the reaction and forms a larger flock, thus effecting better settling. The settled water is filtered and should possess the following characteristics:

1. Clear and colorless.
2. Hardness not to exceed three grains per gallon.
3. Alkaline, its pH value ranging from 9.3 to 10.6.

A type of equipment that will supply water with these characteristics consists of a device to feed the chemicals in proper proportion to the flow of water, a large settling tank containing a small downtake or reaction tube, and pressure filters. The water enters at the top of the reaction tube and is there mixed with the chemicals. The reaction takes place as the water flows downward through the reaction tube and as the water turns upward and across the tank to the outlet the precipitate settles to the bottom of the tank where it is drawn off periodically through a perforated pipe spider connected to a quick opening sludge valve.

Essentially the same equipment is required for clarification of waters that are turbid but do not contain sufficient hardness to justify softening. The chemicals usually employed in this case are aluminum sulphate, lime, sodium aluminate, iron sulphate or various combinations of these.

The amounts of chemicals required for softening for each 1,000 grains hardness removed are as follows:

.12 pound hydrated lime for temporary hardness due to calcium.
.24 pounds hydrated lime for temporary hardness due to magnesium.
.12 pound hydrated lime and .16 pound soda ash for permanent hardness due to magnesium.
.16 pound soda ash for permanent hardness due to calcium.

The quantity of chemicals added is controlled by testing the hardness of treated water with a standard soap solution and by titrating the treated water with standard acid solution using phenolphthalein and methyl orange as indicators. The various relations of these three tests show what changes in chemicals are necessary in case the treatment is not correct.

This type of softening is applicable to any water so that equipment installed for temporary use at one location can always be used at another location regardless of the chemical characteristics of the new water.

Lime-soda ash treated water has the proper pH (hydrogen-ion concentration) value to protect the pipe line against corrosion, is suitable for preparing mud-laden fluid, will not cause scale in boilers, will prevent corrosion in cooling and condensing systems, and will not cause scale in cooling systems unless it is concentrated unduly. There are no uses for water on oil leases for which this type of treated water is not suitable.

WHY WAS IT CALLED THAT?

DEVIL'S PITCHFORK

"Devil's pitchfork" is the lurid name given to a tool devised at the time of the Ranger, Texas, oil boom. Like the alligator grab, it was designed more particularly to recover small, irregularly shaped objects from the well hole. A name calculated to attract attention was desired, and as somebody saw a real or fancied resemblance to the implement which the general manager of the lower regions usually is represented as carrying, it probably didn't take long to select "devil's pitchfork," the designation by which this tool has been known ever since.

NOT GEOPHYSICAL INSTRUMENTS

When geophysical instruments are referred to in connection with the hunt for oil are any such instruments meant, or only what are known as scientific instruments, like the magnetometer and torsion balance? The particular thing I want to know is whether such things as divining rods, water witches and other devices offered for finding oil come under the head of geophysical instruments. Do these so-called unscientific instruments ever really help in finding oil?—O. D. E.

Your question is well answered by W. E. Greenawalt in the Engineering and Mining Journal for January 14, 1928. Mr. Greenawalt says:

"There is no relation between electrical prospecting or geophysics, and dowsing or the divining rod. One is based on physical phenomena, on the properties of matter; the other is a psychic phenomenon, and has no relation to properties of matter. In this connection the reader is referred to 'A History of Water Witching,' by A. J. Ellis, published as Water Supply Paper 416, of the U. S. Geological Survey. A bibliography lists several hundred books, papers and articles on the subject, dating back to the year 1532. In an introductory note in this publication, O. E. Meinzer concludes by saying that as the result of the large number of inquiries received each year by the geological survey, the advice is not to expend any money for the services of any 'water witch' or for the use or purchase of any machine or instrument devised for locating underground water or other minerals. However, the detection of underground water is possible by the new Gish-Rooney resistivity method."

POROSITIES VARY WIDELY

You answered a question from C. S. D. in your issue of September 10, 1931, concerning the methods of determining the porosity of sands. I would like to ask you if there is a very great difference in the sand porosities of different fields. Just what kind of conditions make the differences in porosity? Is porosity regarded as an important feature in the productivity of an oil area?—C. M. N.

Wide differences are found in the sand porosities of different oil fields. The greater the uniformity in the size of the grains that constitute the sand the greater the porosity. Irregularity in the size of the grains diminishes the porosity. Other conditions also affect porosity. Since the porosity of a sand—that is, its space between grains—determines its capacity as a reservoir for oil, it is necessarily an important factor in the productivity of an oil area. In his work on "Increasing the Recovery of Petroleum," Wentworth H. Osgood says in this connection:

"Porosity is one of the primary factors of production, as it represents the capacity of a sand for storing oil. 'Pay streaks' are the most porous or coarsest parts of the oil sand and yield oil most readily, yet it is a mistake to assume that all the oil is derived from one comparatively thin part of the sand body, for productiveness is largely a relative factor and no part of a sand is entirely lacking porosity.

"The porosity or voidage is greatest in a clean, even-grained, uncemented oil sand regardless of the size of the grains. Where the grains are not of uniform size, the smaller grains may fill the spaces between the larger grains and thus reduce the porosity. Silt and cementing material likewise reduce the porosity.

"Studies of sand porosity as early as 1898, by C. S. Slichter of the U. S. Geological Survey, indicated that the porosity of a sand composed of spherical grains of uniform size is independent of the size of the grains and is dependent exclusively upon the arrangement of grains. Slichter proved by mathematical methods that, for spherical grains of uniform size, the porosity is 47.6 per cent for the least compact arrangement and 25.9 per cent for the most compact arrangement of grains, that is, where they are touching at the ends of six diameters. Intermediate conditions between the most and least compact arrangements of spherical grains of uniform size may presumably give porosities ranging between 26 and 48 per cent."

The following table gives a summary of porosity tests made by A. F. Melcher, of the U. S. Geological Survey, which indicate a range in porosity of 7 to 41 per cent:

	Percentage
Pay sands from Pennsylvania	7 to 19
Bradford oil sand, Pennsylvania	15 to 19
First Wall Creek sand, Wyoming	17 to 26
Newcastle oil sand, Wyoming	12 to 26
Bartlesville oil sand, Oklahoma	12 to 29
Hickman sand, Burbank, Okla.	13 to 33
Pay sands, northern Texas	7 to 29
Pay sands, Gulf Coast, Texas	31 to 34
Gas sands, Louisiana	14 to 41
Oil sand, Santa Fe Springs, California	31

LITERATURE ON DRILLING

I want to get easily understandable literature on standard rig and rotary drilling, with drawings of the rigs, etc. If such is published can you inform me by whom?—J. S. S.

It is suggested that you get a copy of the new edition of Walter H. Jeffery's "Deep Well Drilling," which costs $6. You can address Mr. Jeffery at Second National Bank Building, Toledo, Ohio.

Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas, and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

KNOCK TESTING WITH C.F.R. ENGINE

Do you have a description of the C.F.R. engine used for knock testing and how the test is made? What is the meaning of "C.F.R."? If you do not have this information can you refer me to the proper authorities?—R. F. S.

The knock-testing engine recently accepted as the standard for determining the knock rating of motor fuels is the result of investigations by the Co-operative Fuel Research (F.C.R.) Steering Committee, and since the method and engine may be subject to revision and improvement, the present directions should be looked upon as tentative. The tentative recommendations of this committee were published in the S.A.E. Journal, Vol. 29, August, 1931, page 164, and the following abstract is from this source.

The equipment consists of an engine especially built for the purpose of determining knock ratings of motor fuels, the results being expressed in terms of octane numbers.

"Loading and accessory equipment is furnished as a unit with the engine. This includes a cast iron base on which is mounted the engine, the power absorbing medium and panel board. Essential control equipment, instrumentation, switches and so forth, are suitably mounted. The carburetor was especially designed for this engine and may be ordered with their two or four float bowls as may be desired.

"The knock-measuring device is a bouncing pin coupled with either a gas-evolution burette or knockmeter, as preferred."

The standard adjustment include an engine speed of 600 r.p.m., with the jacket temperature equal to that of boiling water. Distilled water or rain water is suggested for the cooling medium.

The primary reference fuels are iso-octane and normal heptane. In view of the expense of these hydrocarbons ($25 a gallon) it is expected that secondary reference fuels, based on the primary standards, will be used for routine work. These secondary fuels should be standardized in terms of octane numbers against octane and heptane mixtures often enough to insure accuracy. The results must be expressed as octane numbers.

The actual determination is made at maximum knock by comparison with known octane mixtures, repeating until at least two successive one-minute readings agree when using the gas-evolution burette. When using the knock meter, the needle should be stationary when the reading is recorded. It is necessary to estimate the proportions of octane heptane by the expected knock rating of the unknown fuel and adjust these from test to test, gradually bringing the two fuels to a common basis or until the readings on the sample are definitely higher than one blend and lower than another blend. For this bracket a value of two octane numbers is recommended and the value of the sample is obtained by interpolation of the figures so recorded, and is reported as the nearest whole number.

UNLOADING GASOLINE WITH COMPRESSED AIR

We have recently incurred quite a discussion as to the practicability and safety in the unloading of casinghead cars with compressed air. The writer has followed this practice for the past 10 years without an explosion occurring through the proper mixture of gas and air. We would appreciate your comments and any advice you might have to offer. —D. S. S.

When Col. B. W. Dunn, of the Bureau of Explosives, was asked about this subject he replied:

"It is a well-known fact that vapor arising from inflammable liquids when mixed with air in certain definite proportions, the range of which is fairly definitely known and varies for different inflammable liquids, will explode when brought in contact with some form of ignition. This fact naturally gives rise to differences of opinion as to the practicability and safety of the practice of using compressed air to facilitate the unloading of tank cars of inflammable liquids, particularly as regards casinghead gasoline and similar liquids which cannot be siphoned or drawn through the top of a tank car by means of a pump. It has been the practice of the Bureau of Explosives for many years to recommend the use of compressed air for transferring the contents of tank cars which are damaged in wrecks or which possess defects which prevent delivery of the car to destination, provided it is not practicable to pump or siphon the contents from the defective tank into another tank or convenient storage vessel. Our records do not show that any serious accidents have resulted from this practice. Evidently you have had similar experience. Our chief concern has been to prevent the use of excessive pressures, and when we are called upon for advice we recommend that the pressure be limited to 10 pounds per square inch by means of a suitable reducing valve. There are no I.C.C. regulations covering this subject."

It should be remembered that large quantities of air are required to produce an explosive mixture with gasoline vapors. The quantity of vapor must be between 1.4 and 6.4 per cent with 98.6 to 93.6 per cent air. A large percentage of hydrocarbon vapor when mixed with a small quantity of air does not explode, but will burn if a flame is introduced. This fact explains why a tank almost full of oil or gasoline does not explode but that a tank nearly empty is more liable to, and the contents ignite during a thunder storm. There seems to be little danger of a similar hazardous condition developing during the unloading of a gasoline car if care is exercised to prevent a large excess of air entering the car.

SLIGH OXIDATION NUMBER LUBRICATING OILS

Will you explain the definition of "Slight oxidation number of lub oils," and where the description of the method may be found in The Oil and Gas Journal?—T. O.

This appears to be a reference to a recent publication of the properties of certain lubricating oils in which the "Slight oxidation number" was given. This seems to have been an error and should have read Sligh oxidation number, after the originator of the test.

It is recognized that mineral lubricating oils do combine under favorable conditions with the oxygen of the air to produce undesirable substances, as indicated by darkening and the formation of gummy deposits. The manufacture of asphalt by blowing with air is an illustration of this oxidation. The gumming tendency of some lubricating oils, followed by the deposition of solid masses caused by dust or metal particles being collected by the gum, may prove troublesome.

The late Dr. T. S. Sligh, Jr., of the U. S. Bureau of Standards, some years ago proposed a test for the purpose of detecting oils which would easily oxidize and also permit one to select the more resistant oils. It is expected that oils of great stability would give better service in any lubricating system than the less resistant oils. The essential principle of the test is the exposure of the oil to a definite set of oxidizing conditions. These being realized by exposure in a closed vessel at a definite temperature in oxygen for a definite period of time. The reaction products are available for evaluation and examination.

The test consists in placing a 10 gm. sample of oil in a closed vessel containing oxygen at atmospheric pressure and keeping the temperature of this vessel at 200° C. (392° F.) for two and one-half hours. The oxidized sample is then diluted to a volume of 100 C. with light petroleum naphtha and the precipitate so produced weighed. The weight of the precipitate expressed as a percentage of the weight of oil used and multiplied by 100 is taken as the oxidation number of the oil.

Thus, if a 10 gm. sample of oil yields 50 milligrams of precipitate the oil is designated as having an oxidation number of 50. Lower oxidation numbers indicate greater resistance to oxidation.

Further details and an extended discussion of the merits of this test were published in The Oil and Gas Journal June 4, 1925, page 125.

CARBON BLACK COLOR DEPTH

Under test the depth of color or tint of different samples of carbon black varies and I would like to ask if this is due to the source or kind of natural gas, or to some factor in the process of manufacture? If you can furnish any references on this subject I would appreciate the information.—M. S. A.

The authorities appear to agree that the tinting strength of carbon black depends entirely on the conditions of its manufacture. A recent article on the subject by Kearsley and Roberts, Ind. Eng. Chem., 23, 835, 1931 (July), discusses the subject. The following is from this source.

The investigation covered the effect of compression, moisture, adsorbed gases, heating, surface tension depressants, and deflocculation on the tinting strength of carbon black. The conclusion is offered that the tinting value is inversely proportional to the gases adsorbed and not an absolute function of particle size.

"It was found that precompression had no direct influence on the strength of carbon (gas) blacks. Samples of black were compressed . . . such compression caused agglomeration of carbon black particles, the agglomerates increasing in size and number proportionately to the applied pressure. When rubbed out with a reducing agent and a diluent, the tinctorial power of the blacks decreased in direct proportion to the pressure. The theory submitted is that the film of gas that was adsorbed on the surface of the individual particle was displaced at the points of contact and took up a position around the agglomerate, thus increasing the thickness of the film. Owing to this increased thickness of protective film, the affinity between the liquid and the film was decreased. * * * It was found, however, that on the addition of an agent that would lower the interfacial tension and consequently raise the adhesion tension of the medium, this film surrounding the agglomerate could be readily disentangled, insuring practically a complete wetting of the particles. By such deflocculation the tinting strength was brought to the maximum.

Eight samples of black, on being subjected to five different temperatures ranging from 100° to 950° C., showed that the tinting strength was inversely proportional to the volatile matter or adsorbed gases present."

References are listed at the end of the article.

REID VAPOR PRESSURE TEST

I would be much obliged if you could tell me whether the I.C.C. or Bureau of Explosives method of vapor pressure determination has been superseded by the Reid method for gasoline shipments by rail? If so, what is the Reid equivalent to 10 pounds, I.C.C. at 90° and 100° F.? Also, the date on which such change, if any, was made?—H. S. G.

The Reid method for determining vapor pressure of gasoline, and other inflammable liquids, as described in Appendix No. 1, page 197, of the I.C.C. regulations and published in B. W. Dunn's Freight Tariff No. 2, became a mandatory requirement October 1, 1930, superseding other methods. No provision has been made for the use of other methods and no equivalents of this sort are available.

Under the revised I.C.C. regulations, gasoline shipped in uninsulated tank cars or Class 3 cars must have a Reid vapor pressure of 25 pounds or less per square inch absolute at 100° F., in summer (March-October) and 33 pounds or less in winter (November-February). Gasoline in insulated or Class 4 cars may be shipped providing it has a Reid vapor pressure of 40 pounds or less in summer and 45 pounds or less in winter.

The adoption of these specifications and Reid method of test more clearly differentiates between the gasoline which may be shipped and handled with complete safety and that which might meet the requirements under the former method, but which could not be shipped and handled with equal safety.

The details of the I.C.C. regulations have been published in the above, Freight Tariff No. 2, page 75, paragraph 236, and page 76, paragraph 243.

The Reid vapor pressure test has been adopted as a tentative standard by the American Society for Testing Materials. Method D 323.

The address of the Bureau of Explosives, from whom these regulations may be obtained, is 30 Vesey Street, New York City.

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1—O. H. Booth, T. C. McGuire, J. W. Hardesty, Howard P. Holmes, Continental Supply Company; S. W. Webster, J. W. Pearce and Albert Chapman, Emsco Derrick & Equipment Company, Kilgore, Tex. 2—K. C. Danfort, storeman, International-Stacey Corporation, Kilgore, Tex. 3—J. P. White, Glenn Fields and R. G. Kelly, Halliburton Oil Well Cementing Company, Henderson, Tex. 4—Larry Seaman, Poe Larsh, R. O. Lowrance, L. A. Fisher and D. M. Reese, Sinclair Oil & Gas Company, Tyler, Tex. 5—Joe Teuton, R. D. Rives and R. W. Ward, Norveil-Wilder Supply Company, Willow Springs, Tex. 6—Jack Edmondson and W. H. Watkins, Jarecki Manufacturing Company, Longview, Tex.

HEARING ON TAKINGS OF GAS IN PANHANDLE

(Continued from Page 53)

time is placed at 7,420,000,000 feet daily of which those companies own approximately 6,000,000,000 feet.

J. G. Dickinson, of the Texoma Natural Gas Co., R. E. Wertz of the Southwest Development Co., and Ross Stuntz of the Cities Service Co. appeared at the request of Commissioner Neff. Each of these witnesses had it written into the hearing record that they were acting as individuals only and were not authorized to act for their respective companies.

Mr. Dickinson was the first witness called. One of the first questions asked by Don Harrington of the independent gas producers was whether the witness felt there was any difference in the operation of a major oil business and a major gas business. Mr. Dickinson answered that he did not. He was then asked if he believed the ratable taking of gas from all producers in the field was fair. He stated this question depended entirely upon how the ratable taking was determined and that to be fair to all concerned it would have to be put on an acreage basis instead of on a basis of open flow of the field. That if a well was completed on a 100-acre lease it should be allowed only one-tenth of the takings as compared to a well completed on a 1,000-acre lease. Mr. Dickinson stated that any other method would create a loss to the purchasing companies in that their whole program of financing and operation has been predicated on company-owned reserve gas acreage. Also that the plan he suggested would limit drilling of gas acreage which would serve as a conservation measure in the gas resources.

R. E. Wertz of the Southwest Development Co., a subsidiary of the Prairie Oil & Gas Co., did not agree with the former witness. His contention was that the oil business has a market in all parts of the country for its product and in event of no ready market the oil could be stored in tanks. This condition did not apply to the gas business in which the market had first to be created before any pipe line could be financed and then the market was circumscribed by the points touched by the pipe line and its laterals. Laten Stanberry of the commission asked if this condition did not make ratable taking more justifiable, to be fair to the small gas producer, owing to the fact that the sole market for his gas was with the pipe line companies? Mr. Wertz stressed the statement that gas pipe line companies could not depend on a supply from the small producer but instead had to make huge outlays of money for reserve gas acreage and in turn had to market their own gas in order to pay out on the investment. Mr. Harrington asked the witness if it was not a fact that his company owned producing companies in connection with the pipe line companies and if it was not true that these producing companies made a profit? This condition Mr. Wertz admitted.

Mr. Wertz in answer to Commissioner Neff stated the subsidiary companies of the Prairie Oil & Gas Co. owned 312,000 acres of gas acreage in this field with 81 producing wells having an open flow of about 2,000,000,000 feet of gas daily. He stated that the daily taking of these lines at this time was about 30,000,000 feet. Evidence was brought out that this company was buying gas from only one independent producer, the Huber Petroleum Co., to the amount of 3,500,000 feet daily but that this contract was a part of the purchase agreement in buying a pipe line from the Huber company. Mr. Wertz also stated the only fair way to make ratable takings was on the acreage basis.

R. M. Stuntz of the Cities Service Co. followed Mr. Wertz with approximately the same line of testimony. He stated his company owned 180,000 acres of gas lands with 70 wells having a capacity of 1,500,000,000 feet open flow. He stated the company's line to Kansas City had a capacity of 130,000,000 feet daily and was transmitting from 30,000,000 feet to 75,000,000 feet daily, depending on the season of the year. He was also very positive the acreage basis was the only fair one on ratable gas taking.

EASTERN FIELDS

(Continued from Page 48)

in further tests for gas. In Lee district, Ed Smith and others are drilling at 2,170 feet on the L. S. Force farm and should soon reach the sand. In the same district, M. F. Crawley is down to 2,640 feet on the A. Hardman farm, and F. F. McIntosh is drilling his test on the Allen Hardman farm deeper and has reached 1,800 feet. Another test in this district is on the Sylvester Brannon farm and is being drilled by L. L. Townsend and others. The hole is 740 feet deep. Other work in Lee district follows: F. F. McIntosh has made a location on the Carr Schafer farm, has a rig standing for No. 4 on the John Riddle farm, is rigging up for No. 3 on the J. Duskey farm, and has the materials on the ground for No. 3 on the Fox and Morgan lease. Ed Hess and others are rigging up for a second test on the John Evans farm, and the Evans Oil & Gas Co. is down 1,060 feet in a second well on the same farm, second lease. The Crummies Creek Oil & Gas Co. has a rig standing for a third well on the D. J. Brannon farm. In Sherman district, Creed Barker and others have a rig standing on the Glory Hathaway farm. In Center district, Walter Bickerstaff and others have shut down at 2,323 feet on the W. A. Stallman farm. T. J. and A. H. Jackson are down 1,280 feet in a second test on the T. J. Jackson farm, and the Bowser Oil Co. 1,955 feet in a fifth well on the W. H. Jackson farm, both Center district. In the same section, Godfrey L. Cabot has a location on the Scott-Umstead lease and Walter H. Bickel has a rig standing for a second test on the George D. Starkey farm. In Sheridan district, Roy Waggoner and others are down 820 feet on the Clay Chenowith farm, and C. B. Lewis and others 1,890 feet on the A. E. Kenny farm. In the same district, T. J. Crawley has started drilling a fourth well on the William Cooper farm and is down 270 feet. Clem S. Morris and others are fishing for tubing in preparing to drill his test on the Sarah E. Kersey farm deeper. Creed Barker and others are preparing for a new test in this district and are building a rig on the Gay Wilson farm. The Chemical Oil Co. is also building a rig in Sheridan district on the A. T. Yoak farm.

In Monongalia County the West Penn Gas Corp. is down 500 feet on the Charles Taylor farm in Battelle district, and the Pedlar Run Oil Co. reached 2,570 feet on the Lewis R. Hess farm in Clay district and shut down. In Raleigh County, Godfrey L. Cabot is drilling a third well on the Beaver Coal Co. tract in Trap Hill district, and is down 2,220 feet with no report. In Greenbrier County, the test of the Thompson Harris Co. remains shut down at 1,940 feet and is in litigation. In Nichols County the Hamilton Gas Co. is drilling two wells, one on the Craig heirs farm and down 400 feet and the other on the Henry McQueen farm at 750 feet, both being in Hamilton district.

SOUTHWEST PENNSYLVANIA

Interest is again aroused in Somerset County, Southwest Pennsylvania, by the report that, on slightly deeper drilling, the Maust well of the American Natural Gas Co., which was reported as dry, is now showing for a gas well and that further locations have been made and another well is drilling. This is the most easterly gas struck in Southwest Pennsylvania, the Maust well lying north and east of the discovery well on the O. S. Moore farm and over a half mile distant. South of this pool geologists have been active and further tests are reported planned. The old section of Southwest Pennsylvania remains very quiet with little new work contemplated.

One new completion for the week was in Washington County, the test of the Ropp Oil & Gas Co. on the S. McCauslin farm in West Bethlehem Township. It was completed as a light gas well in the Fifty Foot sand at a depth of 1,600 feet.

GULF COAST FIELDS AND WILDCATS

(Continued from Page 39)

Sinclair Oil & Gas Co.'s No. 8 Wilburn, Henry Griffith League, 350 ft. W of No. 7 and 48 ft. from N line of tract ..... Drlg. salt 2,495 ft.
Sun Oil Co.'s No. 2 Winfree, W. D. Smith Sur., 50 ft. E of SW line and 150 ft. N of S line of tract ..... Drlg. hard sand 5,156 ft.
Sun Oil Co.'s No. 11 Wilburn, Wm. Hodges Sur., 550 ft. W of No. 5 and 50 ft. from N line of tr. ..... Drlg. salt 2,161 ft.
The Texas Company's No. 7 Wilburn, Henry Griffith League, 116 ft. S of Humphreys Corp.'s No. 8-H Kirby ..... Drlg. hard lime 2,432 ft.
The Texas Company's No. 2 Lawrence, Henry Griffith League, 240 ft. from E line and 412 ft. from N and S lines of strip ..... Drlg. salt 1,659 ft.

HUMBLE—HARRIS COUNTY

Southern Coastal Oil Co.'s No. 3 Perkins, John Jones Sur., 150 ft. N of No. 2 ..... Derrick.
Sun Oil Co.'s No. 25 Bender, W. B. Adams Sur., 1,155 ft. from C of R.R. on an extension of the N line of the Bender North Addition and 8 ft. S. ..... No report.
The Texas Company's No. 24 Kohler (W.O.) ..... Set 50 ft. 4½-in. screen 2,990 ft; completed flowing 120 bbls. net oil, 5% b.s. and wtr.

PORT NECHES—ORANGE COUNTY

The Texas Company's No. 1 Polk-Kuhn-Glass, 260 ft. E and 1,545 ft. S of SW cor. Marshall Beaucham Sur., in the T. J. Notgrass Sur. ..... Drlg. hard sand 1,355 ft.
The Texas Company's No. 3 Kuhn, 587 ft. S and 150 ft. W of NE cor. of the Mary E. Hall Sur. No. 2 ... Location.

HULL—LIBERTY COUNTY

Republic Prod. Co.'s No. 144 Dolbear, Jesse Devore Sur., 250 ft. W of No. 97 and 200 ft. SW of No. 99 ..... Drlg. 1,200 ft.
Weneedan Oil Co.'s No. 2 Palmer, Chas. Underton Sur.. Set 1 joint screen 2,050 ft.
Sun Oil Co.'s No. 10 Carr ..... Drlg. rock 700 ft.

PIERCE JUNCTION—HARRIS COUNTY

Gulf Production Co.'s No. 33 Taylor, James Hamilton Sur. No. 52, 300 ft. E of No. 32 and 50 ft. from S line ..... Drlg. gumbo 1,407 ft.
Southern Petroleum Co.'s (Tilton et al) No. 1 N. C. Barnes, B.B.B.&C. Sur. No. 1,028, 15 ft. from N line and 25 ft. from W line of Blk. 49, Jones Subd... No report.

HIGH ISLAND—GALVESTON COUNTY

Yount Lee Oil Co.'s No. 20 Cade, N. Fitzsimmons Sur., 161 ft. W of No. 15 and 146 ft. SW of No. 17 ..... Shut down 60 ft.
Yount Lee Oil Co.'s No. 22 Cade, N. Fitzsimmons Sur., 125 ft. S of No. 21 ..... No report.
Yount Lee Oil Co.'s No. 23 Cade, N. Fitzsimmons Sur., 300 ft. S of No. 22 ..... No report.

DAMON MOUND—BRAZORIA COUNTY

Layne et al's No. 8 Wisdom, 155 ft. from NW line and 150 ft. from NE line, Lot 52, Blk. D, Wisdom Subd., A. Darst Sur. ..... No report.

ORCHARD—FORT BEND COUNTY

Gulf Production Co.'s No. 30 Moore, Mark Smith Sur., 400 ft. N and 600 ft. W of No. 29 ..... Drlg. gumbo 2,186 ft.

ORANGE—ORANGE COUNTY

Jefferson Prod. Co.'s No. 1 Bland ..... Sandy shale 2,980 ft.; drill stem stuck.

LOCKWOOD—FORT BEND COUNTY

Cullen & West and Gulf Prod. Co.'s No. 2-A Lockwood & Sharp (D.D.) ..... Cored hard sand with oil odor 5,089-5,101 ft.
Cullen & West and Gulf Prod. Co.'s No. 3-A Lockwood & Sharp, J. Rabb Sur., 600 ft. E of No. 2-A.. Gas well shut in waiting orders; sand 3,107-39 ft.
Cullen & West and Gulf Prod. Co.'s No. 4-A Lockwood & Sharp, J. Rabb Sur., 550 ft. W of No. 2-A ..... Derrick.
Cullen & West and Gulf Prod. Co.'s No. 2 H. P. Lockwood, J. Rabb Sur., 300 ft. N and 900 ft. W out of SW cor. 383-acre tract ..... Location.
Cullen & West and Gulf Prod. Co.'s No. 2 A. P. George, J. Rabb Sur., 300 ft. S and 905 ft. E out of NW cor. 200-acre tract ..... Hard sand showing oil 5,119-23 ft; reaming to set csg.

LOST LAKE—CHAMBERS COUNTY

Pure Oil Co.'s No. 6 Lost Lake, 2,381 ft. W and 289 ft. S of No. 5 in Lost Lake ..... Drlg. tough gumbo and lime 2,622 ft.

NASH—FORT BEND COUNTY

Harrison & Abercrombie's No. 15 Nash, Thomas Alsbury S League, 450 ft. E and 75 ft. S of Rycade Oil Corp.'s No. 13 Nash ..... Oil sand 4,792-4,805 ft; fishing 9⅝-in. csg.

MOSS BLUFF—LIBERTY AND CHAMBERS COUNTIES

Gulf Production Co.'s No. 4 McFaddin, J. McFaddin Sur.. Drlg. gumbo 3,836 ft.
Humble Oil & Ref. Co.'s No. 8 Sterling, James McFaddin Sur., 150 ft. from N line and 1,650 ft. from E line of 513-acre tract ..... Drlg. sand and shale 5,385 ft.

REFUGIO—REFUGIO COUNTY

Larco Gas Petroleum Co.'s No. 4 Strauch heirs, 150 ft. from N line and 150 ft. from W line, Lot 6, Blk. 2.. Spudded.
Moody-Seagraves Prod. Co.'s No. 4 O'Connor, Refugio Town Tract, 150 ft. from N line and 1,282 ft. from W line of 60-acre tract ..... T.D. 6,477 ft; milled out 6,386 ft; set 1 joint of screen; completed flowing 65 bbls. "gasoline," 1,400 lbs. pressure, ¼-in. choke.
United Prod. Corp.'s No. 6 O'Brien, 150 ft. from S line of tract, 350 ft. W of No. 3 ..... Oil sand 6,438-51 ft.; twisted off joint drill stem; S.D.; waiting orders.
United Prod. Corp.'s No. 2-A W. J. Fox, Wm. Hews and L. Brown Sur., 2,099 ft. NE along SE line from SE cor. of lease, thence 1,690 ft. NW at right angles ..... Cmtd. 9-in. (O.D.) csg. 3,956 ft.
United Prod. Corp.'s No. 4 M. F. Lambert, Wm. Hews and L. Brown Sur., 2,514.7 ft. NE along NW line from SE cor. lease and 330 ft. NW at right angles.... T.D. 5,925 ft; plugged to 5,830 ft; set 18 ft. screen; completed flowing 1,020 bbls. P.L.O., pressure 900 lbs. on tubing and 890 lbs. on csg., ¼-in. choke.

SOUTH LOUISIANA FIELDS
LOCKPORT—CALCASIEU PARISH

Vacuum Oil Co.'s No. 5-A Farquahar, 105 ft. S and 110 ft. E of NW cor. SW NE, Sec. 8-10s-9w ..... Set 1 joint screen 6,482 ft; testing.

JENNINGS—ACADIA PARISH

Jennings Pet. Co.'s No. 2 Eunice Crowley (W.O.), 325 ft. S and 50 ft. W out of the NE cor. of Sec. 42-9s-2w. Drlg. gumbo 4,211 ft.
Yount Lee Oil Co.'s No. 10 Housierre-Latrielle, 5,435 ft. E and 1,070 ft. N of SW cor., Sec. 47-9s-2w ..... Drlg. hard sand 7,794 ft.

SORRENTO—ASCENSION PARISH

Gulf Ref. Co.'s No. 20 United Land Co., 4,040 ft. N and 760 ft. W, SE cor., Sec. 15-10s-4e ..... Location.

HACKBERRY—CAMERON PARISH

Calcasieu Oil Co.'s No. 26 Watkins, 1,199 ft. N and 1,343 ft. W of SE cor. of Sec. 13-12s-10w ..... Set 19 ft. 11 ins. 4½-in. screen at 3,000 ft; completed flowing 3,000 bbls. P.L.O., 1,085 lbs. pressure, ¾-in. choke.
Calcasieu Oil Co.'s No. 3 Landry, Sec. 13-12s-10w, 139 ft. from N line of 11-acre tract and 300 ft. E of No. 1.. Cap rock 2,905-70 ft; plugged to 2,905 ft.
R. E. Seiss' No. 2 J. M. Vincent ..... Shut down 2,163 ft.

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The NO-OX-ID MASTER COAT

These photographs are taken from motion pictures of a recent NO-OX-ID Master Coat installation for the Will-Cook Construction Company.

Loading 60 ft. lengths of 24 in. pipe.

Pipes strung along the right-of-way.

Applying NO-OX-ID "G" Special in groove of coupler.

Applying NO-OX-ID "G" Special. Followed with gray NO-OX-ID-IZED Wrapper.

Dresser Couplers ready for distribution along the line.

Dresser Coupler—stacked to keep clean until assembled.

Where conditions permit, large ditching machines are used.

Line-up crew placing the 24 in. pipe in position.

NO-OX-ID Master Coat used for the prevention of corrosion.

Applying NO-OX-ID "G" Special.

NO-OX-ID is quickly and easily applied. Leather mittens worn.

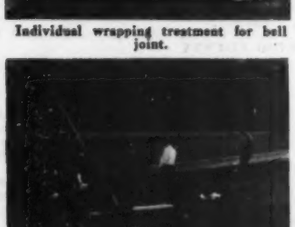
Application of wrapper adjacent coupler.

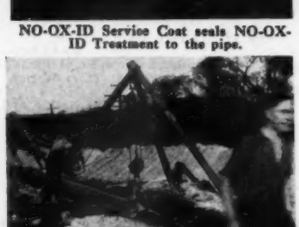
Individual wrapping treatment for bell joint.

NO-OX-ID Service Coat seals NO-OX-ID Treatment to the pipe.

NO-OX-ID Service Coat applied by pot and sling method.

NO-OX-ID Service Coat heated in oil fired field kettle.


Protecting coating with piece of wrapper carton while lowering.

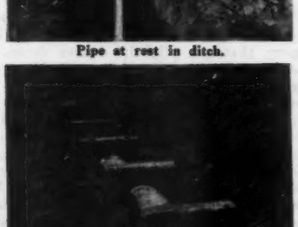

Lowering pipe into ditch.

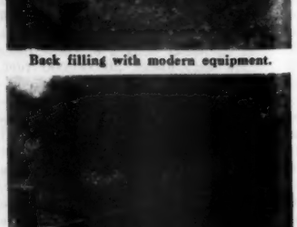
Pipe at rest in ditch.

Back filling with modern equipment.

Materials for NO-OX-ID Master Coat.

Hard Roads and pavements not disturbed.


Line in swamp anchored with concrete blocks.


Crossing the Des Plaines river on piers.

DEARBORN CHEMICAL COMPANY

"A House of Chemical Engineers" In Its Forty-fourth Year of Service to Industry

310 S. Michigan Ave., Chicago 807 Mateo St., Los Angeles 205 E. 42nd St., New York

Canadian Offices and Factory: 2454-2464 Dundas St., West, Toronto

J. G. Sutton's No. 2 Irwin, 1,600 ft. W and 200 ft. N of SE cor. NE SE of Sec. 13-12s-10w ..... Spudded.
Yount Lee Oil Co.'s No. 43 State, 1,690 ft. W and 1,320 ft. N of SE cor. of Sec. 13-12s-10w ..... Drlg. gumbo 520 ft.
Yount Lee Oil Co.'s No. 44 State, 1,110 ft. N and 1,915 ft. W of SE cor., Sec. 13-12s-10w ..... Location.
Yount Lee Oil Co.'s No. 45 State, 1,320 ft. N and 810 ft. W of SE cor., Sec. 13-12s-10w ..... Location.
Yount Lee Oil Co.'s No. 46 State, 1,380 ft. N and 1,555 ft. W of SE cor., Sec. 13-12s-10w ..... Location.
Yount Lee Oil Co.'s No. 47 State, 1,420 ft. N and 1,408 ft. W of SE cor., Sec. 13-12s-10w ..... Location.

STARK—CALCASIEU PARISH

Gulf Refining Co.'s No. 28 Lutcher-Moore, Sec. 19-9s-12w .. Rigging up to pump 1,204 ft.

MISCELLANEOUS WILDCATS

TEXAS

BRAZORIA COUNTY

The Texas Co.'s No. 1 Belcher (W.O.), 157 ft. from NW line and 223 ft. from SW line, Lot 18, Block A, Suburban Gardens Subd., Harvey N. Little Sur. .. Deepened from 5,481 ft. to 5,483 ft; set 1 joint 6⅝-in. screen; completed flowing 60 bbls. P.L. O. hourly; pressure 300 lbs. on csg. and 100 lbs. on tubing; ⅝-in. choke; production increased to 90 bbls. hourly, 1,000 lbs. pressure, but on Sept. 10, 1931, pressure jumped to 2,000 lbs. showing sand but cutting oil to 5 bbls. hourly.
The Texas Co.'s No. 2 Belcher, Harvey N. Little Sur., 1,728 ft. southeasterly from N cor. of S half of Sur., along NE line and thence 123 ft. at right angles ... Derrick.
United Oil Syndicate's No. 1 Levitt, 900 ft. from W line and 400 ft. from S line of John Peske Sur. ..... T.D. 1,594 ft. in gumbo; drill stem stuck.

BURLESON COUNTY

Marek & Son's No. 3 A. Marek, N. McFaddin Sur., 1,068 ft. N and 225 ft. W of SE cor. of tract ..... No report.
Marts et al's No. 1 W. H. Boyett, W. McWilliams Sur., 3,168 ft. N of N cor. of City National Bank 208-acre tract and 300 ft. SE of NW line of Boyett tract.. No report.
Mid-South Oil Co.'s No. 1 Duckworth (W.O.), E of Clay Station ..... T.D. 3,070 ft.; rig up to deepen.

FORT BEND COUNTY

Stone & Wyman's No. 1 Beard, H.&T.C. Sur. No. 118, 1,150 ft. from NW line and 1,892 ft. from NE line.... S.D. 1,190 ft.

GRIMES COUNTY

Rianjo Oil Co.'s No. 2 Cuthrell, Pat B. O'Connor Sur., C of 110-acre tract ..... Drlg. hard lime 2,920 ft.

HARRIS COUNTY

Givens & Daybault's No. 1 Lobit, David Middleton Sur., Blk. 19, Lobit Subd. ..... Drlg. shale 2,186 ft.
Humble Oil & Ref. Co.'s No. 2 Irwin (D.D.), Mykawa, Wm. Lovett Sur. ..... Drlg. shale 5,415 ft.
Humble Oil & Ref. Co.'s No. 5 Minnetex, Mykawa, 150 ft. from S line and 200 ft. from W line, Lot 261, Wm. Lovett Sur. ..... Location.
J. P. Hunnicutt's No. 1 Haney, T. Pitching Sur,. 150 ft. out of NE cor. of Geo. E. Haney 730-acre tract ..... Drlg. sand, shale and lime 4,509 ft.
Louisiana Oil & Dev. Co.'s No. 1 J. W. Wilson, W. Ritchie Sur. ..... Location.
Shubert & Alexander's No. 1 Herman Hale, 1,058 varas E of NW cor. R. A. Hanks Sur., thence 790 varas S and thence 70 varas W 74° ..... Shut down in gumbo 2,206 ft.

JACKSON COUNTY

Chicago-Gulf Oil Co.'s No. 9 Drushell, Edna F. Rodriguez Sur., 1,080 ft. N, 58° E No. 8 ..... Drlg. 1,000 ft.

JEFFERSON COUNTY

Humble Oil & Ref. Co.'s No. 1 Nelson, Wm. Rice Sur., 550 ft. from N line and 50 ft. from E line of W½ of 1,071-ac. tract ..... T.D. 234 ft; cmtd. 20-in. csg. at 220 ft.
John I. Pipkin and Elam's No. 1 Broussard, McGaffey Sur., 800 ft. from S line in center E and W of 206-ac. tract ..... Rigging up.
Texas Gulf Sulphur Co.'s No. 5 Thomas, Fannett, Wm. Smith Sur., 300 ft. W and 200 ft. N, of SE cor. of E 446-ac. tr. ..... Sulphur test.

LIBERTY COUNTY

L. B. House's (I. R. Ingram) No. 1 C. T. Palmer, James Fenner Sur., 1,000 ft. from W line and 850 ft. from S line of tract ..... Shut down in shale and lime 2,716 ft.
Hamm et al's No. 1 Harvard, Davis Hill ..... Gum'o 1,015 ft.; S.D.

MATAGORDA COUNTY

Harvey Smith's No. 1 Boker (Citrus Grove), J. V. Criswell Sur., Robbins Subd., 2,000 ft. S and 2,000 ft. E of NW cor. of Lot 14 and Lot 15 ..... Moving in rig.

MONTGOMERY COUNTY

Hogg Bros.' No. 1 Sealey, Jas. Pevehouse Sur., 1,575 ft. N of N line of Horton & Woodson's 1,563-ac. tr., and 2,226 ft. E of W line of H. & W. 1,870-ac. tr. .. Rig.
Humble Oil & Ref. Co.'s No. 1 W. A. Penn, 750 ft. from N line and 900 ft. from E line of S. J. McFarland Sur. ..... Drlg. shale 2,515 ft.
Strake et al's No. 1 South Texas Dev. Co., 468 ft. in westerly direction along N line of Theo. Slade Sur. from SW cor. of A. McGowan Sur., and thence 750 ft. in southerly direction at right angles from said line in Slade Sur. ..... Drlg. hard sand 3,615 ft.

ORANGE COUNTY

Altex Oil Co.'s (Veteran Oil Co.) No. 1 Reed, A. Nelson Sur. No. 1, 500 ft. from N line and 250 ft. from E line of tract ..... T.D. 4,603 ft.; sidetracked 1,200-2,200 ft.; S.D.
Crew Oil Co.'s No. 1-A Mansfield, 50 ft. E of No. 1 ..... S.D. 1,710 ft.

POLK COUNTY

Freeman et al's No. 2 Freeman ..... S.D. 3,162 ft.
T. B. Hoffer's No. 1 Saner-Ragly Lbr. Co., 300 ft. out of most northerly cor. of most easterly County School Land Abst. 271 ..... S.D. 300 ft.
Trans-Coastal Oil Co.'s No. 1 M. E. Roberts, J. F. Rumayor Sur., 350 ft. from W line and 150 ft. from N line of tract ..... S.D. 734 ft.

REFUGIO COUNTY

Blanco Creek Oil Co.'s No. 1 Damaan, 150 ft. from N line and 150 ft. from W line of Blk. 14, Bonnie View Ranch Subd. ..... Shut down 4,637 ft.
Humble Oil & Ref. Co.'s No. 1 O'Connor, John Keating Sur., 6,012 ft. S from NE cor. along SE line of Lon T. Ross Sur., thence 7,376 ft. W at right angles in John Keating Sur. ..... Drlg. hard sand 3,837 ft.

SAN JACINTO COUNTY

E. P. Edwards' No. 1 J. R. Bennett, Cold Springs ..... S.D. 750 ft.

TRINITY COUNTY

Scientific Prodcers Co.'s No. 1 Thompson, L&G.N. Sur. No. 47, 50 ft. out of NE cor. of H. K. Thompson 199-ac. tr. ..... Rig.

TYLER COUNTY

King Oil Co.'s No. 1 Caswell ..... Sand and shale showing oil 1,255 ft.; cmtd. 6-in. csg. 1,218 ft.
Allied Pet. Co.'s (Texas Southern Pet. Co.) No. 3 Wilson, Mrs. E. Cherry Sur. No. 798, 1,500 varas from W line and 600 varas from N line ..... Fishing 5,025 ft.

VICTORIA COUNTY

Houston Oil Co.'s No. 1 Conrad, T.&N.O. Sur. No. 1, 1,100 ft. from SW line and 100 ft. from NW line ... S.D. 5,170 ft; moving in new equipment.
The Texas Company's No. 3 McFaddin, S 15° W., 6,200 ft. and N 75° W 1,850 ft. out of NE cor. John M. Rine Sur. ..... Drill stem stuck 4,424 ft; fishing.
United Prod. Corp.'s No. 5-A McFaddin, 4,250 ft. N along extended E line of C. L. Mann Sur., in Maria Traviesa Sur. ..... Plugged from 3,828 to 3,760 ft; to test sand 3,754-59 ft.

WALLER COUNTY

McDaniel and associates' No. 1 Citizens State Bank, B.B.B.&C. Sur., C of 150-ac. tract ..... Rig standing.

WASHINGTON COUNTY

Cord Oil Co.'s No. 1 Hahn, 500 ft. from N line and 1,852 ft. from W line of J. H. Alcorn Sur., Abst. 3.. No report.
Penn-Tex Oil Co.'s No. 2 Kamas Brenham, S. M. Williams Sur. ..... Coring hard lime 3,476 ft.

WHARTON COUNTY

Beard & Brumblow's (Shibe & Gray) No. 1 Brown (W.O.), S of El Campo ..... No report.
Bonds & Alexander's No. 1 Hahn, S.A.M.G. Sur., Sec. 13, 800 ft. W and 200 ft. N of NE cor. 152.1-ac. tract ..... Abd. in shale 1,844 ft.
W. H. Wallace et al's No. 1 Lee, 600 ft. S and 800 ft. W from NE cor., Sec. 18, G.H.&H. Sur. ..... Drlg. shale 2,018 ft.

SOUTH LOUISIANA

ASCENSION PARISH

McElroy Petroleum Co., 150 ft. S and 150 ft. W of NE cor., Sec. 29-10s-4e ..... Shut down 4,070 ft.
Crawford & Doyle's No. 1 Johnson, Sec. 23-9s-13w ..... S.D. 875 ft.
L. O. Davis' No. 1 Industrial, Sec. 29-9s-10w ..... Standing 6,568 ft.
Wilfred Lahay's No. 1 Jardell, Sec. 16-10s-12w ..... S.D. 3,650 ft.
Success Oil Co.'s No. 1 Hewitt, 90 ft. out of SW cor., Sec. 11-9s-11w ..... Rig.
Vacuum Oil Co.'s No. 1 Walt (D.D.), 225 ft. out of SE cor., Sec. 12-9s-7w ..... Sand showing oil 6,965 ft; reaming to set csg.

CAMERON PARISH

Vacuum Oil Co.'s No. 2 Cameron Meadows, 3,120 ft. S and 1,900 ft. W from NE cor., Sec. 21-14s-9w (500-ft. S No. 1) ..... Set 1 joint screen 5,270 ft.; to test.

IBERIA PARISH

Jefferson Lake Oil Co.'s No. 21 Lake Peigneur, Sec. 58-12s-5e, 300 ft. NW of No. 20 ..... Sulphur test.
Jefferson Lake Oil Co.'s No. 22 Lake Peigneur, Sec. 58-12s-5e, 600 ft. NW of No. 21 ..... Sulphur test.
Jefferson Lake Oil Co.'s No. 23 Lake Peigneur, Sec. 58-12s-5e, 600 ft. NW of No. 22 in line with No. 21.. Sulphur test.
Jefferson Lake Oil Co.'s No. 24 Lake Peigneur, Sec. 58-12s-5e, S 600 ft. 79 deg. 30 min. W of No. 22 ..... Sulphur test.

IBERVILLE PARISH

Standard Oil Co.'s No. 1 Myrtle Grove-Wilbert, Bayou Choctaw, Sec. 52-9s-11e, 250 ft. W No. 1 Gray ..... Salt 2,566-2,712 ft; abd.
Standard Oil Co.'s No. 6 Schwing, Bayou Blue, Sec. 73-9s-11e, 317 ft. S of No. 2 ..... Drlg. sandy shale 5,250 ft.

LA FOURCHE PARISH

State Production Co.'s No. 1 Mrs. W. H. Stark, Chacahoula Dome, 1,921 ft. E and 1,340 ft. S of NW cor., Sec. 71-15s-15e ..... Sulphur test.
State Production Co.'s No. 1-B Mrs. W. H. Stark, Chacahoula Dome, 1,921 ft. E and 1,540 ft. S of NW cor., Sec. 71-15s-15e ..... Sulphur test.
The Texas Co.'s No. 3 L. L. and E. Leesville, 4,439 ft. S and 468 ft. E of NW cor., Sec. 26-21s-22e..... Location.

PLAQUEMINES PARISH

Humble O. & R. Co.'s No. 5 Cockrell-Moran, Lake Grand Ecaille, 10,377 ft. N and 2,614 ft. W of NE cor. of Twp. 21s-26e ..... Location.
Humble O. & R. Co.'s No. 6 Cockrell-Moran, Lake Grand Ecaille, Twp. 21s-26e, 5,000 ft. E of Washington Sta. ..... Drlg. gumbo 300 ft.

TERREBONNE PARISH

La. Gas & Fuel Co.'s No. 2 Minor, 3,480 ft. S and 1,980 ft. E of NW cor., Sec. 3-18s-16e ..... Drlg. hard sand 1,802 ft.
The Texas Company's No. 2 La.L.&E., Bay Junop ..... Drlg. sand and gravel 1,265 ft.
The Texas Company's No. 4 La.L.&E., Bay Junop ..... Location.
The Texas Company's No. 10 State, Lake Barre ..... Location.
The Texas Company's No. 11 State, Lake Barre ..... Rigging up.
The Texas Company's No. 12 State, Lake Barre ..... Location.
The Texas Company's No. 14 State, Lake Barre ..... Location.
The Texas Company's No. 1 L.L.&E., Lake Barre, 2,645 ft. S and 595 ft. E of NW cor., Sec. 30-21s-20e... Location.
The Texas Company's No. 6 State-Lake Pelto (D.D.), 1,650 ft. N and 670 ft. W from SE cor. tract, Sec. 8-23s-18e ..... Salt 2,455-2,660 ft; abd.

VERMILION PARISH

Pure Oil Co.'s No. 2 Southwest Louisiana Land Co., 1,300 ft. E and 300 ft. S of NW cor. Sec. 4-12s-1w.. Drlg. sandy lime 4,834 ft.

WEST FELICIANA PARISH

Putnam Syndicate's No. 2 Como Plantation, Sec. 51-1s-4w. Shale and lime 2,050 ft.; waiting on 8¼-in. csg.

LOUISIANA-ARKANSAS PROVEN AREAS

(Continued from Page 36)

Dengail O. & G. Co.'s No. 3 Nulton, 330 ft. N and E, SW cor. NW NE, Sec. 1-7-13 ..... Derrick.
Hawkins et al's No. 1 Moran, Sec. 1-7-11 ..... 400 ft. oil in hole 2,620 ft.; W.O. S.R.
O. A. Gautier et al's No. 1 Mischell, 330 ft. E, 150 ft. N, SW cor. SE NW, Sec. 30-3-12 ..... S.D.W.O. 2,532 ft.
Hawkins & Antoon's No. 1 Newton, Sec. 1-7-11 ..... W.O.S.R. 2,609 ft.
Hudson & Bird's No. 1 Walden, 480 ft. N, 300 ft. E, SW cor. SW NE, Sec. 26-8-11 ..... S.D. 1,800 ft.
Lanier & Dyer's No. 1 Barthold, 335 ft. N, 525 ft. E, SW cor. SE NE, Sec. 35-8-12 ..... W.O.S.R; 1,600 ft. oil in hole 2,521 ft.
Zeke Lohman's No. 1 McCormick, 660 ft. E, 330 ft. N, SW cor. NE SW, Sec. 2-7-11 ..... S.D. 1,606 ft.
Loring Oil Co.'s No. 18 Bowman-Hicks, 1,280 ft. S, 275 ft. E, NW cor. SW NW, Sec. 15-7-12 ..... Drlg. 3,203 ft.
Loring Oil Co.'s No. 19 Bowman-Hicks, 1,475 ft. W, 75 ft. S. NE cor. SW NE, Sec. 16-7-12 ..... Coring chalk rock 2,975 ft.
Lyons & Neely's No. 3 Byrd, Sec. 1-7-11 ..... S.D. 400 ft.
L. K. McGuffin's No. 1 Bush, NW cor. NW SE, Sec. 1-7-11 ..... S.D. 400 ft.
Ben Merritt, tr.'s No. 2 Byrd, Sec. 1-7-11 ..... S.D. 88 ft.
H. W. Perritt's No. 5 Bowman-Hicks, 330 ft. S, 410 ft. E, NW cor. SW SW, Sec. 2-7-12 ..... Set 6-in. 2,200 ft.
Eddie Seif's No. 2 Jacob, Sec. 1-7-11 ..... Drlg. 1,140 ft.
Stovall, tr.'s No. 2 Nulton, 241 ft. N, 330 ft. W, SE cor. NE NW, Sec. 1-7-13 ..... Rigging up.

UNION PARISH

Interstate Nat. Gas Co.'s No. 27-C Howard, 660 ft. S and E, from C, Sec. 32-20-3e ..... Location.

ARKANSAS

UNION COUNTY—EL DORADO

Lion O. & R. Co.'s No. 9-A G. P. Hayes, 242 ft. S, 246 ft. W, NE cor. Lot 5, NE, Sec. 4-16-15 ..... Drlg. hard gray lime 5,835 ft.
Southern Prod. Co.'s No. 1 Wingfield, NE cor. SE NW, Sec. 16-19-15 ..... Arranging to resume drlg.

UNION COUNTY—URBANA

Marine Oil Co.'s No. 1 Winn est., 330 ft. S and E, NE cor. S½ NW, Sec. 11-18-13 ..... T.A. 3,586 ft.

Marine Oil Co.'s No. 2-E Thompson, 330 ft. N, 330 ft. E, SW cor. NE NE, Sec. 10-18-13 ..... Location.
Wilson & Chapman's No. 1 H. Norman, 330 ft. N and E, SW cor. SE NE, Sec. 3-18-13 ..... Set 6⅝-in. 3,560 ft. T.D. 3,583 ft.

EAST TEXAS
PANOLA COUNTY

Daisy O. & G. Co.'s No. 1 Rucks, Jno. Palmer Sur. .... S.D. 3,270 ft. (corrected).
Dillon & Braham's (was W. G. Banks et al's) No. 1 C. O. Baldwin, 1,395 ft. W, 1,362 ft. S, NE cor. Baldwin 290 ac. in Hampton West Sur. ..... S.D. 1,555 ft.
Natural Gas Production Co.'s No. 8 Floyd, 50 ft. S and 100 ft. W from No. 1 Floyd, Ben C. Jordan Sur. ..... Location.
United Prod. Corp.'s No. 17 Steele, 1,320 ft. N, 660 ft. W, SE cor. C. D. Steele lse., in B. C. Jordan Sur. .. Location.
Southwestern O. & G. Co.'s No. 1 E. R. Vinson, 3,005 ft. S, 1,001 ft. W, NE cor. C. T. Anderson Sur. ... S.D. 2,650 ft.

MISSISSIPPI
HINDS COUNTY

Jackson O. & G. Corp.'s No. 2 Mayes, Sec. 2-5n-1e, 30 ft. N and 60 ft. W of SE cor. NE NW ..... Drlg. black shale 2,474 ft.
Love Petroleum Co.'s No. 1 Federal Compress & Warehouse Co., Sec. 15-5n-1e, 662 ft. S and 2,120 ft. E, NW cor. ..... Drlg. 2,277 ft.

RANKIN COUNTY

James Alexander, tr.'s No. 1 Wright Cast Stone Co., 200 ft. S, 1,440 ft. NE cor. NE NW, Sec. 13-5n-1e ... Began Oct. 1; set 10-in. 117 ft; drlg. 1,635 ft.
Cummins & Montgomery's No. 1 Ivey, Sec. 13-5n-1e, NE Lot 10 of Block D, E. Jackson Place, 1st addition ..... Derrick pattern.
J. E. Grandstaff et al's No. 1 Burford, 2,310 ft. E, 300 ft. N, SW cor., Sec. 11-5n-1e ..... Completed, estimated 35,000,000 ft. gas 2,454 ft.
J. E. Grandstaff et al's No. 1 East, Sec. 12-5n-1e, 1,180 ft. W and 515 ft. N, SE SW ..... Rigging up.
Orr's No. 1 Casey, Sec. 12-5n-1e, 540 ft. E and 1,930 ft S, NW cor. SW ..... Began Oct. 1; set 10-in. 96 ft; drlg. 1,012 ft.

WILDCAT OPERATIONS IN MISSISSIPPI

ADAMS COUNTY

Company, farm and location— Remarks:
Ark.-La. P. L. Co.'s No. 1 Brandon Hall Farms, 201 ft. from W line, 390 ft. from S line, Lot 32, Brandon Subd., Sec. 61-13n-1w ..... Coring 4,036 ft.

CLARKE COUNTY

Gulf Ref. Co.'s No. 1-A Long Bell Lbr. Co., C SW SW, Sec. 10-2n-16w ..... Drlg. chalk rock 3,572 ft.

HINDS COUNTY

Hilgard Gas Co.'s No. 1 The Mississippi Co., Sec. 4-5n-1e, 1,300 ft. E and 450 ft. N of cen of section ..... 10-in. csg. parted; skidded over; rigging up.
Howard Oil Co.'s No. 1 Jackson College, C NW NW, Sec. 9-5-1e ..... S.D. 74 ft.
Southern Pet. Co.'s No. 1 Wilson (was Tri-State O. & G. Co.'s), 330 ft. E, 340 ft. N, SW cor. SE NE, Sec. 28-6-1e ..... S.D. 20 ft.; W.O.
F. E. Stewart et al's No. 1 Miss. Cotton Seed Products Co., Sec. 4-5n-1e, 330 ft. S and 440 ft. W of NE cor. SE ..... Derrick.

HUMPHREYS COUNTY

Danciger O. & G. Co.'s No. 1 Belgrade Lbr. Co., C NW, Sec. 29-14n-4w ..... Drlg. sand rock 2,073 ft.

JASPER COUNTY

Bay Springs Pet. Co.'s No. 1 Keyes, C NW NE, Sec. 2-12-9 ..... S.D. 2,360 ft.

MONROE COUNTY

Amory Dev. Co.'s No. 1 Bourland, Sec. 2-13-19 ..... S.D. 3,015 ft.
McAlpine et al's No. 1 Cowart, second hole, Sec. 2-12-19 .. Drlg. hard lime 3,486 ft.

NEWTON COUNTY

Bob Dalton's No. 1 Majure, 400 ft. N, 300 ft. E of SW cor. SE, Sec. 25-6n-11e ..... Began Sept. 29; set 10-in. 295 ft.

NOXUBEE COUNTY

Thompson & Donohue's No. 1 Donohue, Sec. 25-16n-17e ... Set 8-in. 1,605 ft; T.D. 1,715 ft.

RANKIN COUNTY

Attkisson & Dyer's No. 1 Valentour, 200 ft. S, 200 ft. E, NW cor., Sec. 18-5n-3e ..... S.D. 1,198 ft.
Gulf Ref. Co.'s No. 1-A Hanna, Sec. 23-6n-1e ..... Junked hole; skidded over; drlg. 30 ft.
Majestic O. & G. Co.'s No. 1 Elton Lbr. Co., Sec. 10-4n-3e. Derrick.
Meredith et al's No. 1 Allen, 470 ft. W, 295 ft. N, SE cor. SW, Sec. 13-5n-1e ..... Set 6⅝-in. at 2,371 ft.
Square Deal O. & G. Co.'s No. 1 Spann, NW cor. SE NE, Sec. 13-5n-1e ..... S.D. 2,495 ft.
United Gas Public Service Co.'s No. 1-A McLaurin, 3,950 ft. E, 660 ft. S, NW cor. SW, Sec. 8-5n-3e ..... W.O. csg. 2,523 ft.
Willis & Culley's No. 1 Applewhite & Holden, 10 ft. N, 40 ft. E, SW cor., Sec. 12-5n-1e ..... Drlg. 1,498 ft.

SCOTT COUNTY

M. U. Culley et al's No. 1 Owens, Sec. 2-5-9 ..... Derrick.

WARREN COUNTY

Eagle Bend O. & G. Co.'s No. 1 Kiger, SW cor. SW SE, Sec. 9-18-3 ..... S.D. 2,607 ft.
United Gas Public Service Co.'s No. 1 Tchula Co-Operative Store, 1,980 ft. W, 660 ft. N, SE cor. SE, Sec. 33-15n-3e ..... S.D. for fuel 1,523 ft.

WEBSTER COUNTY

P. J. McAlpine's No. 1 Henly (was Cumberland Oil Co.'s No. 1 Henly), SE NW, Sec. 15-21n-11e ..... S.D. 1,800 ft.

WINSTON COUNTY

Miss. Drlg. Co.'s No. 1 Scarbrough, NW cor., Sec. 15-12-14 ..... Drlg. 4,007 ft.

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Continued from Page 36)

NATCHITOCHES PARISH

Cooper et al's No. 2-A Cooper, C SE SE, Sec. 32-11-10 ... S.D. 1,518 ft.
Mid-West Production Co., Inc.'s No. 1 H. Brown, Sec. 34-11-10, 200 ft. W, 330 ft. S, NE cor. SE ..... Derrick.
C. M. Talley et al's No. 1 C. M. Talley, 1,980 ft. W, 660 ft. S, NE cor. SE, Sec. 29-11-10 ..... Tested dry; S.D. 1,380 ft.

OUACHITA PARISH

Wilson & Mitchell No. 1 Williams, Sec. 5-16-1e, 330 ft. E, 240 ft S, NW cor. SW SE ..... Derrick.

RED RIVER PARISH

La. Oil Dev. Co.'s No. 2 La. Delta Pecan Co., 2,950 ft. S, 300 ft. E, NW cor., Sec. 37-13-11 ..... Spudded in; S.D. 50 ft.
Mack Jourden Co.'s No. 1 Lockett, 4,035 ft. S, 1,080 ft. E, NW cor. SW, Sec. 29, in Sec. 32-13-10 ..... S.D. 2,550 ft.

RICHLAND PARISH

Alto Gas Co.'s No. 2 Hunt, 660 ft. S and E, NW cor., Sec. 13-17-5 ..... Derrick.
National Gas Co.'s No. 1 Singletary, 1,980 ft. N, 660 ft. W, SE cor., Sec. 20-15n-7e ..... S.D. 2,515 ft.
Southern Carbon Co.'s No. 1-B C. M. Noble, 2,966 ft. N, 1,535 ft. W, cor. Secs. 7, 8, 17 and 18, in Sec. 37-15-6 .. Location.

SABINE PARISH

W. M. Coates' No. 1 Stille, 330 ft. N, 660 ft. W, SE cor., Sec. 35-8-13 ..... Derrick.
Diffie & Barnett's No. 1 Lites (was J. W. Clark's), 330 ft. N, 330 ft. W, SE cor. SW NW, Sec. 34-8-11 ..... S.D. 105 ft.

R. L. Gay, tr.'s No. 1-A Long Bell Lbr. Co., 430 ft. S, 300 ft .W, NE cor. NW NW, Sec. 10-8-12 ..... S.D. for wtr. 3,753 ft.
R. L. Gay, tr.'s No. 16 Bowman-Hicks, 330 ft. S. and E, NW cor. SW SW, Sec. 18-7-13 ..... Rigging up.
Langbridge Oil Co.'s No. 1 Stephens, 330 ft. N and E, SW cor. SE NE, Sec. 17-9-11 ..... Set 6⅝-in., 3,176 ft; T.D. 3,626 ft.
T. M. LeGrand's No. 1 Peterson, 330 ft. N and E of C, Sec. 34-7-13 ..... Drlg. 1,200 ft.
J. J. Keen, tr.'s No. 1 Belton (no check), Sec. 31-9-13 ... D.S. stuck 1,720 ft.
A. H. Thames' No. 1 Edward est., 150 ft. NW SE cor. NE SE, Sec. 8-8-13 ..... S.D. for wtr. 1,300 ft.

TENSAS PARISH

U. A. Duvall et al's No. 1 Martin Jacob, 150 ft. S, 150 ft. W, NE cor., Sec. 1-14-11e ..... S.D. 2,775 ft.
A. R. Willis et al's No. 1 Currey, 1,320 ft. S, 1,320 ft. E, NW cor., Sec. 39-11-13 ..... S.D. 3,545 ft.

UNION PARISH

Dan Brooks' No. 1 Odus Douglas, 330 ft. S and E, NW cor. NE SW, Sec. 9-22-3 ..... S.D. 3,509 ft.

VERNON PARISH

Exchange Petroleum Co.'s No. 1 White & Grandin, Sec. 29-3n-7w, 1,980 ft. E, 1,430 ft. N, SW cor. Sec. ..... Coring 2,380 ft.

ARKANSAS
CHICOT COUNTY

R. R. Smith's No. 1 Lytle, 660 ft. N, 660 ft. E, C, Sec. 21-23-3 ..... T.A. 2,975 ft.

COLUMBIA COUNTY

Kendall Oil Co.'s No. 1 Fullenwelder, Rhea & Kitchen, Sec. 13-17-22 ..... S.D. 804 ft.

CLAY COUNTY

S. C. Jeffus' No. 1 Underwood, 510 ft. N, 350 ft. W, C, NW SE, Sec. 4-20-5 ..... S.D. 1,262 ft.

CLEVELAND COUNTY

Crum & Stillwell's No. 1 E. R. Bell, Sec. 10-10s-13w .... Rigged up and S.D.

CLEBURNE COUNTY
(Cable tools)

Donnelly-Craver et al's No. 1 Donophan Lbr. Co., SE cor. NW, Sec. 33-11-9 ..... S.D. 3,740 ft.

CRAWFORD COUNTY

Ozark Nat. Gas. Co.'s No. 1 Hammond, C SE SE, Sec. 29-10-29 ..... Drlg. 1,025 ft.

DALLAS COUNTY

E. C. Brewer's No. 1 W. E. Hillman, 330 ft. E, 40 ft. S, NW cor. SE NE, Sec. 20-10-13 ..... S.D.; W.O. 2,869 ft.
J. H. James, tr.'s No. 1 Fordyce Lbr. Co., 200 ft. S, 200 ft. E, NW cor. NE, Sec. 11-9-15 ..... S.D. funds 2,520 ft.
Zepp O. & G. Co.'s No. 2 Hillman, 450 ft. E, 340 ft. S, NW cor. SE NE, Sec. 10-20-13 ..... Drlg. 2,560 ft.

HOT SPRINGS COUNTY

Star Oil Co.'s No. 1 Cunningham, 285 ft. S, 285 ft. W, NE cor., Sec. 11-5-16 ..... S.D. 1,300 ft.

LINCOLN COUNTY

Lawrence Cook, tr.'s No. 1 McGhee Planting Co., 420 ft. S, 200 ft. W, NE cor. NE SW, Sec. 5-8-7 ..... Fishing D.S. 2,800 ft.

LITTLE RIVER COUNTY

Roberts Oil Co.'s No. 1 H. J. Russell, 330 ft. E, 330 ft. S, NW cor., Sec. 25-12-19 ..... Location.

LOGAN COUNTY

J. H. Flowers' No. 1 J. H. White, Sec. 13-6-26 ..... S.D.; W. O. 3,570 ft.

MILLER COUNTY

W. E. Noel et al's No. 1 Dickson hrs., 1,980 ft. W, 660 ft. S, NE cor., Sec. 11-20-27 ..... S.D. 1,955 ft.

OUACHITA COUNTY

Bolin & McLeon's No. 1 L. D. Nealy, 150 ft. S, 150 ft. W, NE cor. SE SW, Sec. 25-16-15 ..... 600 ft. oil in hole 2,112 ft; W.O. S.R.
Copenhaven et al's No. 2 Berg, C SE SE, Sec. 13-15-17 ... S.D. for funds 532 ft.

PIKE COUNTY

E. R. Henderson's No. 1 Tilyou, 660 ft. W, 500 ft. S, NE cor. NE SE, Sec. 26-8-14 ..... T.A. 2,909 ft.
E. R. Henderson's No. 1 J. L. Lee, 400 ft. S, 350 ft. E, NW cor. SW SE, Sec. 31-8-24 ..... S.D.; W.O. 1,020 ft.
E. R. Henderson's No. 1 W. B. East, 200 ft. S, 150 ft. W, NE cor., Sec. 13-9-23 ..... Arranging to set 8-in. to cut off wtr. 338 ft.

PRAIRIE COUNTY

Powell Creek O. & G. Co.'s No. 1 Kloss, NE SW, Sec. 3-4n-6w ..... Rigging up.

SCOTT COUNTY

Heavener O. & G. Co.'s No. 1 Riser, Sec. 36-4-26 ..... S.D.; T.D. 1,436 ft.
Waldron O. & G. Co.'s No. 1 White, NE cor. SW NW, Sec. 17-3n-29 ..... S.D.; waiting on csg. 1,860 ft.

UNION COUNTY

Chapman & Wilson's No. 1 A. H. Hadley, 330 ft. N, 330 ft. E, SW cor. NE SW, Sec. 3-18-13 ..... 600 ft. fluid 30% S.W. in hole; T.A. 3,570 ft.
Drillers Oil & Dev. Co.'s No. 1 Pickering, 320 ft. N, 665 ft. E, SW cor. NW NE, Sec. 1-17-16 ..... Drlg. gummy lime 1,465 ft.
H. H. Helms' No. 1 C. H. Murphy, NE cor. NW NE, Sec. 31-16-14 ..... Derrick.
Joe Modisette et al's No. 1 W. D. Webb, Sec. 4-18-13, NE cor. NW SE ..... Rigging up.

WASHINGTON COUNTY
(Cable tools)

C. H. Willoughby's No. 1 Jones, Sec. 34-16-30 ..... S.D. for funds 1,795 ft.

YELL COUNTY
(Cable tools)

Tegmeir & Luckett's No. 1 Falcon, Sec. 26-7-21 ..... S.D. 5,710 ft.

EAST TEXAS
BOWIE COUNTY

Hindeman & Bell's No. 1 Merritt (was Maud-Redwater Oil Co.'s), 175 ft. N, 175 ft. E, SE cor. G. W. Hardidge 100-ac. tr. on Floyd Merritt tr. in Y. S. McKinney Sur. ..... Reaming 3,240 ft.
Logan & Elliott's No. 1 Smith, 2,600 ft. S, 2,500 ft. W, NE cor. Chas. Lewis Sur. ..... Drlg. sand and red rock 4,485 ft.
Tarkington & Jones' No. 1 W. W. Whybark, 200 ft. S, 200 ft. W, SW cor. J. H. Dyer Sur. ..... S.D. sticky shale 1,102 ft.
Lee Timberlake et al's No. 2 Tidwell, 2,510 ft. N, 655 ft. W, SE cor. T. M. Rice Sur. ..... S.D. 3,000 ft.

CAMP COUNTY

McDonald Bros.' No. 1 Tillery, 150 ft E, 450 ft. S, NW cor. 127-ac. tr. in J. H. Murphy Sur. ..... S.D. 3,600 ft.

CASS COUNTY

J. F. Morrisey's No. 1 T. J. Wilson, 1,088 ft. S of N line, 2,376 ft. E of W line of H.R.S., J. R. McFarland Sur. ..... S.D. 3,670 ft.
Davis & Pigg's No. 1 Roy Brian, SW cor. Roy Bryan 38-ac. tr., Albert H. Latimer Sur. ..... S.D. 2,055 ft.
Everets Drlg. Co.'s No. 1 H. W. Whittington, 300 ft. S, and W, NE cor. 69-ac. Whittington tr., L. Strong Sur. ..... S.D. 3,922 ft.; waiting on D.S.
Geo. McKanle's No. 1 R. E. Hall, 150 ft. N, 150 ft. W, SE cor. Hall's 117-ac. tr., H. Buckler Sur. ..... S.D. 4,195 ft.
C. E. Murdock's No. 1 First National Bank, Evans Watson Sur. ..... S.D. 4,390 ft.
Olds & Smith's No. 1 Athony, 3,054 ft. W-E line, 356 ft. S-N line, J. C. Byers Sur. ..... Reaming 3,170 ft.
John C. Rogers' No. 1 I. E. Lanier, 573 ft. N, 879 ft. W, SE cor. Lanier 86 ac. in K. E. Welborn Sur. .... S.D. 2,280 ft.
John C. Rogers et al's No. 1 W. Q. Henderson, 3,100 ft. S, 3,100 ft. E, NW cor., Wm. Davis Sur. ..... S.D. 955 ft.
United North & South Co.'s No. 1-A Nickelberry, W. A. Irvin Sur., 300 ft. S and E, NW cor., Nickelberry 50-ac. tr. ..... Drlg. 2,579 ft.

HARRISON COUNTY

Gholson et al's No. 1 Bivins Farm Co., on J. K. Bivins, Jr.'s 320-ac. tr., Thos. Toby Sur. ..... Dry and abd. 2,085 ft.
Lloyd Oil Corp.'s No. 1 E. S. Timmons, 150 ft. from N line to 350 ft. from E line of 105-ac. tr., Findley Sur ..... Drlg. limey shale 3,365 ft.

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Similarly, the JENKINS DIAMOND TRADE-MARK identifying every genuine Jenkins Valve is a guaranty of workmanship and performance. It signifies that the valve so marked has been designed, constructed and tested in strict accord with the exacting manufacturing standards which Jenkins Bros. has maintained for sixty-seven years. It is a token of protection to the user that a Diamond-marked Jenkins Valve can be relied on for good performance in the service and under the pressure for which it is rated.

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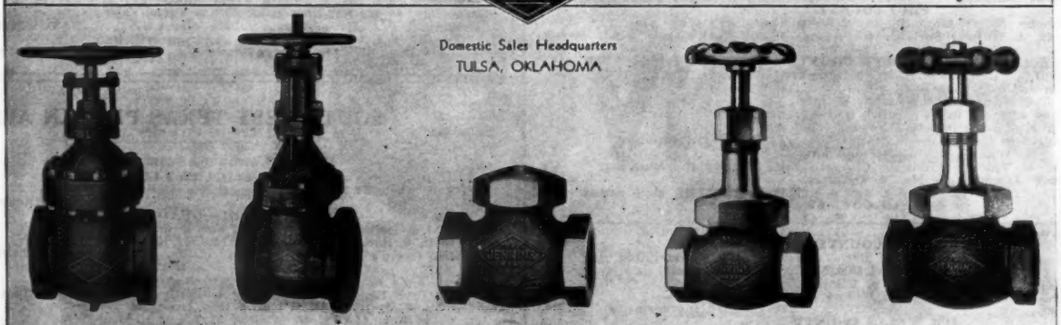

Fig. 876, Extra Heavy Iron Body Double-Disc Parallel Seat Gate Valve, Screwed. Inside screw, stationary spindle.

Fig. 651, Standard Iron Body Solid Wedge Gate Valve, Flanged. Outside screw and yoke, rising spindle.

Fig. 756, Bronze Horizontal Check Valve, Screwed. Regrinding.

Fig. 106-A, Standard Bronze Globe Valve, Screwed. One-piece screw-over bonnet; slip-on stay-on disc holder.

Fig. 890, Standard Iron Body Bronze Trimmed Globe Valve, Screwed. Regrinding, union bonnet.

Ryan Consolidated Pet. Corp.'s No. 1 J. M. Fuhr, 1,300 ft. N of NW cor. T. J. Copelin Sur., 1,675 ft. SW at right angles to NW SE line of O'Neal Sur. .....Derrick.
Thomas & Kinsey's No. 1 J. R. Watson, Thos. Iden Sur...Abd. 1,672 ft.

MARION COUNTY

Gist, Claunch & Dodson's No. 1 Miller, 1,470 ft. E line, 725 ft. N line, SW cor. H. Fulgran H.R. Sur. .....S.D. 300 ft.
Geo. Hinderman et al's No. 1 F. V. Lindsey, 2,500 ft. S, most northerly N line, 3,555 ft. E most easterly W line, Alexander Albright Sur. .....S.D. 2,330 ft.

PANOLA COUNTY

Hoffer et al's No. 1 Cameron Lbr. Co., center 1,306-ac. tr. in W. M. A. LaGrove Sur. .....Derrick.
Moses & Wallace's No. 1 Daniel, 400 ft. N and W lines, Mrs. Gerrell 100-ac. tr., SW cor. Isabel Hanks Sur. ..Spudded and S.D.
G. A. Davidson's No. 1 Latham, Wm. Rich Sur. .....S.D.; changing to heavy rig 550 ft.
J. L. Nelson et al's No. 1 J. W. Williams, 300 ft. S, 700 ft. W, NE cor. Williams' 67-ac. tr. in Jas. Hanks Sur. .....Drlg. 1,965 ft.
United Gas Public Service Co.'s No. 11 Werner, 1,163 ft. N, 2,418 ft. W, SE cor. D. B. Lewis Sur. .....Testing 3,665 ft.

RED RIVER COUNTY

D. M. Buffington's No. 1 Hossier, E. Hughhart Sur. ....S.D. 2,795 ft.
Johnson Pet. Co.'s No. 2 Randolph, Edw. Dean Sur. ....S.D. 2,280 ft.

SHELBY COUNTY

I. M. Bradley's No. 1 Ashberry (no check), G. W. Mitchell Sur. .....S.D. 3,280 ft.
E. L. Chapman's No. 1 Pickering Lbr. Co., C. E. Henry (headright) .....Reaming to bottom 3,620 ft. T.D. 3,864 ft.
Chapperell Oil Co.'s No. 2 Holt, Matthew Moore Sur. ...S.D. 3,127 ft.
M. H. Francis' No. 1 John Mims, Mary Smith Sur. .....Sidetracking D.S. 2,000 ft; T.D. 2,800 ft.
H. H. Gracey's No. 1 J. A. Morrison, 1,500 ft. N, 200 ft. E, SW cor. J. A. Morris' 109-ac. tr., Wm. English Sur. .....S.D. 2,600 ft.
Henry Moulding's No. 1 Frost Lbr. Co., NE cor. Frost Lbr. Co.'s 80-ac. tr., A. D. Fountain Sur. .....Drlg. 3,220 ft.
McRoby et al's No. 1 Windham, Wm. Leach Sur., on Windham 296-ac. tr. .....Set 8¼-in. 1,750 ft.
Ridgeway et al's No. 1 Polley, Domingo Gonzales Sur., 3,180 ft. E of SW cor., 160 ft. N at right angles of Polley 457-ac. tr. .....S.D. 405 ft.
Schultz et al's No. 1 Hughes, 150 ft. SW cor. Hughes' 110-ac. tr., J. Clay Sur. .....Fishing for D.S. 4,700 ft.
A. D. Smith's No. 1 T. D. Carroll-J. A. Parker Sur., 1,500 ft. N, 300 ft. W, SE cor. J. A. Carroll Sur. ...S.D. 3,240 ft.
C. H. Tautenhahn's No. 1 J. C. Bogard, 300 ft. S, 900 ft. E, NW cor. J. C. Bogard's 52-ac. tr., Thomas Baker Sur. .....S.D. 20 ft.; waiting on D.S.
Tenant et al's No. 1 J. Henry, C. Z. Walker Sur. .....S.D. 3,457 ft.
United North & South Prod. Co.'s No. 1 Windham, 800 ft. W, 1,050 ft. N, SE cor. of Windham 171.5-ac. tr. on A. H. English Sur. .....Rigging up.

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

(Continued from Page 40)

Mauldin et al's No. 1 Kimball, 300 ft. S Grayburg's No. 1-A Kimball, S. Winship Sur.....T. D. 3,544 ft.; standing.

BEXAR COUNTY

J. E. Anderson's No. 1 Suburban Irrigated Farms, 500 ft. to N line, 600 ft. to E line of C. Logan Sur.....T. D. 960 ft.; drlg.
Ingersoll-Miller's No. 2 Carruth, 3,900 ft. S, 2,500 ft. W of NE cor. of tract in Francisco Bolen Sur.....T. D. 480 ft.; standing.
Moore-Jaurer's No. 1 Ellison, 2,916 ft. from E line, 1,500 ft. from S line of T. York Sur.....T. D. 2,170 ft.; sidetracking.
Dr. Ewell Neil's No. 1 J. Watson, 500 ft. from W line, 1,700 ft. from S line of B. Martinez Sur.....T. D. 1,100 ft.; waiting on drill stem.
Schneider, Rees et al's No. 2 Claussen, 12 miles NE of San Antonio .....T. D. 865 ft.; standing.
Tri-State Oil Co.'s No. 1 E. B. Carruth, 2,500 ft. from S line, 2,560 ft. from E line of tract in F. Bolen Sur..T. D. 770 ft.; set 10-in. csg.

CALDWELL COUNTY

Ralph Ogden's No. 1 Nealson, 150 ft. from N and E lines of farm in John B. Gray Sur. .....Derrick.
Ralph R. Lewis' No. 1 Keith McGee, 600 ft. from E and S lines of tract in J. Pinchback Sur.....T. D. 50 ft.; laying water line.

COMAL COUNTY

Caldwell & Lanier's No. 1 T. J. Byler, 175 varas from W line, 370 varas from N line of 320-ac. tract in the H.E.&W.T. No. 5,894 Sur.....T. D. 722 ft.; standing.

DEWITT COUNTY

Gibson & Sturm's No. 1 Clark, Dolores Alderete Sur.....Rigged up; standing.

DUVAL COUNTY

Camp and Southern Crude's No. 2 Hubbard, 990 ft. from N line, 330 ft. from W line of B.S.&F. Sur. No. 73 .....T. D. 2,509 ft.; abnd.
S. J. Carpenter et al's No. 1 Juan Benavides, Blk. 33, Mesquite grant .....T. D. 1,712 ft.; standing.
Frank Gravis' No. 1 Shallert, Sur. No. 255.....T. D. 1,450 ft.; shut down.
South Texas Production Co.'s No. 1 Benavides, 330 ft to N and E lines of Sur. 173 .....T. D. 1,806 ft.; drlg.

FRIO COUNTY

A. H. Wray's No. 1 Roche, 330 ft. from N and W lines of NW SE, Sec. 123, A. Hutzler Sur.....T. D. 2,404 ft.; in sand, waiting orders.

GUADALUPE COUNTY

Barnhill et al's No. 1 H. L. Hoffman, 450 ft. to N and W lines of farm in John G. King Sur. .....Derrick.
Bolling et al's No. 1 J. E. Lennie, 850 ft. from E line, 1,050 ft. from S line of farm in V. Cortario Survey..Rigging up.
Harry Bruner's No. 2 Jim Sherrill, 330 ft. from NW and SW lines of tract in George Allen League.....T. D. 180 ft.; standing.
McGarrity et al's No. 1 A. Wesch, Jr., 150 ft. to N and E lines of farm, H. M. Thompson Sur.....T. D. 1,200 ft.; standing.
Schleyer, Atherton and Armstrong's No. 1 Ogletree, Robert Smith Sur. .....T. D. 1,745 ft.; shut down.

GOLIAD COUNTY

Camp and Stanolind's No. 2 Pettus, 1,589 ft. N, 62 degrees 46½ minutes W of No. 1 .....T. D. 2,740 ft.; drlg.

HAYS COUNTY

J. C. Jones et al's No. 1 Byder, John Ingram Sur.....T. D. 930 ft.; standing.

JIM HOGG COUNTY

Cole Petroleum Co.'s (Peterman-Minahan) No. 1 Palacious, 450 ft. from W line, 150 ft. from N line of Blk. 14, Sur. 231.....T. D. 2,270 ft.; coring.

JIM WELLS COUNTY

Stanolind Oil & Gas Co.'s No. 1 N. A. Hoffman, 6,800 ft. from S line, 10,000 ft. from W line of most easterly NE cor. of 7,000-ac. ranch in La Trinidad Sur.....T. D. 3,100 ft.; drlg.

KENDALL COUNTY

Borgett et al's No. 1 W. Haag, 3,804 ft. from N line, 1,506 ft. from W line of W. Avery Sur.....T. D. 1,245 ft.; shut down.
Dixon Oil Co.'s No. 1 Ottmar Behr, 823 ft. from S and N lines of Jessie Wilson Sur., 3 miles S of Sisterdale .....T. D. 2,708 ft.; standing.
Sitton et al's No. 1 Garvin, C of NE of D. L. Richardson Sur. in the D. L. Richardson Sur., 1 mile NE from Kendalia .....T. D. 1,482 ft.; shut down.
Fred S. Dibble's No. 1 Ellebrach, Sur. 77, N part of county .....T. D. 50 ft.; shut down.
Sartain's No. 1 Lawhon, 30 ft. SE of Perkins' No. 1 Lawhon; taken over at 281 ft.....T. D. 575 ft.; no report.

KERR COUNTY

Herbert Oil Co.'s No. 1 J. D. Witt, 1,320 ft. N line, 1,320 ft. W line of Sec. 1,922, W. H. Hamilton Sur....T. D. 200 ft.; standing.
Evans & Gant's No. 1 Selker-Mears, C.C.S.D.&N.G.R.G. Sur. No. 1,605.....T. D. 4,031 ft.; shut down.
Evans & Gant's No. 1 E. Young, A. E. Burge Sur. No. 28 .....T. D. 1,312 ft.; standing.
Evans & Gant's No. 2 Love, 150 ft. S and W line of Sur. 1,593 .....T. D. 3,260 ft.; resumed drlg.

LASALLE COUNTY

Buckley Ranch Oil & Gas Co.'s No. 1 Buckley, 200 ft. from S line, 330 ft. from W line of Sur. No. 37.....T. D. 1,600 ft.; drlg.

LIVE OAK COUNTY

Henderson Coquat's No. 1 Hewitt.....T. D. 400 ft.; standing.

LEE COUNTY

A. H. Wheeler and associates' No. 1 fee, Blk. 47, H. Donohue Sur. .....T. D. 3,525 ft.; shut down.
C. B. Polk et al's No. 1 Stoltz, Hiram Donohue Sur.....T. D. 2,300 ft.; shut down.

MAVERICK COUNTY

I. N. Boicourt's No. 1 Bandera School Land.....T. D. 2,284 ft.; standing.

McMULLEN COUNTY

Whall, Scherer et al's No. 1 Shiner, Henry Brewer Sur....T. D. 2,008 ft.; shut down.
A. E. Adams' No. 1 Martin, 150 ft. NW line, 150 ft. to SW line of E. Melon No. 213 Sur.....T. D. 700 ft.; drlg.

MEDINA COUNTY

Frank A. Brown's No. 1 Fohn, 150 ft. from E line, 790 ft. from N line of J. F. Torry Sur. No. 113.....T. D. 922 ft.; twisted off drill stem; fishing.
Genard Bros.' No. 1 L. Crawford, 150 ft. to N and W lines of tract in J. Keppler Sur. No. 478.....T. D. 2,145 ft.; drlg.
J. H. Hickey's No. 1 Jungman, at N end Chicon Lake....T. D. 650 ft.; shut down.
Star Pet. Co.'s No. 1 Medina Valley Irrigation Co., 150 ft. from S and E lines of Isom Palmer Sur. No. 30...T. D. 825 ft.; shut down.

MILAM COUNTY

Dil-Tex Oil Corp.'s No. 1 E. Lawson, 660 ft. from NE and 270 ft. from SE lines of farm in Fernando Rodriguez Sur., near Cameo.....T. D. 1,960 ft.; standing.
H. W. Elliott's No. 1 Marek, 767 ft. from N line, 500 ft. from W line of 160-ac. tract in B. Wickson Sur.....T. D. 1,295 ft.; shut down.
Nowlen's No. 1 Beard, 1,250 ft. from SE line, 450 ft. from SW line of farm, in J. F. Guthrie Sur., 4 miles S Thorndale .....T. D. 2,036 ft.; drlg.
Red Bank Oil Co.'s No. 1 Foster, A. G. Berry Sur.....T. D. 4,875 ft.; fishing.

NUECES COUNTY

Southern Crude Oil Pur. Co.'s No. 1 Chas. E. Stratton, 1,650 ft. E line, 330 ft. S line of P. Sancho Sur.....T. D. 4,765 ft.; testing.

REAL COUNTY

McGinley Corp.'s No. 1 Haby, C of SW, Sec. 175.....T. D. 2,530 ft.; shut down.

TRAVIS COUNTY

Bass & Speed's No. 1 Joe F. Nagle, 750 ft. from SW line, 450 ft. from NW line of farm in L. Kimbro Sur..Rigging up.
C. R. Franklin et al's No. 1 J. Wilson, 160 ft. from N and W lines of farm in A. Alexander Sur.....T. D. 495 ft.; drlg.
Fritz Fuchs' No. 1 L. Ballerstedt, 450 ft. from N line, 750 ft. from E line of tract in Amos Alexander Sur...T. D. 1,200 ft.; no report.
Ray & Henze's No. 1 Hatech, in C of tract in S. Hamilton Sur. .....T. D. 360 ft.; no report.
Waldron et al's No. 1 T. Cook, 900 ft. from NW line, 2,500 ft. from SW line of D. H. Minor Sur.....T. D. 1,200 ft.; no report.

WEBB COUNTY

Power & Dettenhaim's No. 1 Cowan & Goss, 1,870 ft from W line, 1,656 ft. from N line of Sur. No. 1,606..Drilling.
Winfield Killam No. 1 Killam, Block 18, Survey 1,618 near Relser .....T. D. 1,475 ft.; drlg.
Cole Pet. Co.'s No. 4 Benavides, 3,480 ft. to E line, 160 ft to S line of Sur. No. 1,613 .....T. D. 4,050 ft.; shut down.
E. A. Sterling & Co.'s No. 1 de la Garza, 150 ft. from N and W lines of Block 30, Survey No. 336 .....T. D. 38 ft.; set surface csg.
Eugene Garner, Jr.'s No. 1 Billings, 411 ft. E line, 956 ft. N line of NW NE, Sur. 71.....Abnd. location.

WILLIAMSON COUNTY

Hays & Gee's No. 1 E. G. Johnson, 1,800 ft. from N line, 170 ft. from E line of tract in B. C. Low Sur., S of Georgetown.....T. D. 1,325 ft.; hole cleaned.
H. Fritz' No. 2 Fee, 35 ft. N of No. 1 Fee.....T. D. 1,100 ft.; drlg.
McLean's No. 1 R. C. Miller, 300 ft. from S line, 150 ft. from W line of farm in Manlove Sur.....T. D. 1,670 ft. sidetracking.
Nowsman et al's No. 1 Cruse, 500 ft. to NW line, 150 ft. to NE line of farm in H. W. Eubank Sur. .....T. D. 30 ft.; spudded in.
R. S. Wilson's No. 1 Speckels, 150 ft. N of road, 600 ft. from W line of farm in J. Jordan Sur., 1 mile N of Coupland .....Shut down 875 ft.

WILSON COUNTY

A. M. Blume's No. 1 Nickolson, C. Diaz Sur.....T. D. 1,360 ft.; drlg.

ZAPATA COUNTY

Ballard & Mercer's No. 1 Flores, 500 ft. from NE line, 580 ft. from SE line of Block 27, Porcion 37 .....Location.
F. H. Etheridge's No. 1 J. Bustamente, 640 ft. from NE line, 150 ft. from NW line of farm in Comitas grant .....Derrick.
M. D. Slator's No. 1 Slator, 1,000 ft. from SE line, 1,200 ft. from SW line of Block 25, J. V. Borrego grant...T. D. 800 ft..; drlg.
F. H. Etheridge's No. 1 Henne-Winch, in Sur. No. 286...T. D. 1,900 ft.; drlg.
T. H. Ward's No. 1 Uribe, 150 ft. NW line, 150 ft. SW line, Blk. 8 Subd., Share 7, Partition No. 6, T. Uribe Partition of Jose V. Borrego Sur.....Rigged up and standing.
Bill Henry et al's No. 1 Gopher Trust estate, Borrego grant .....T. D. 1,525 ft.; standing.
National Oil Co.'s No. 1 Zapata Trust estate, 617 ft. NW line, 96 ft. NE line, Blk. 97, De Prom Subd., Porcion 6 .....T. D. 600 ft.; standing.
National Oil Co.'s No. 2 Adams, 150 ft. from NW line and SW line, Blk. 11, Borrego grant.....T. D. 1,320 ft.; standing.

SOUTHWEST TEXAS PROVEN AREAS

(Continued from Page 40)

Luval Oil Corp.'s No. 5 Bishop Cattle Co., 1,615 ft. from W line, 330 ft. from S line of N½ of Sur. 135..T. D. 2,327 ft.; complete 500 bbls. on choke; heavy gas pressure.

CAMP POOL—GUADALUPE COUNTY

Humble Oil & Refining Co.'s No. 1-C Sue Denman, 450 ft. from S line, 150 ft. from W line of lease offsetting Camp's discovery well.....T. D. 2,532 ft.; proration gauge 876 bbls.
John F. Camp's No. 1 Dan Denman, 150 ft. to N line, 450 ft. to E line of tract in Wm. Arrington Sur.....Set surface csg.
Humble Oil & Refining Co.'s No. 1 Dan Denman, 450 ft. to N line, 150 ft. to W line of lease in Wm. Arrington Sur. .....Moving in.

WALSH POOL—JIM WELLS COUNTY

Larcro Petroleum & Gas Co.'s No. 2 Wade, 800 ft. S of No. 1 .....T. D. 2,000 ft.; drlg.

CARTWRIGHT POOL—LIVE OAK COUNTY

Houston Oil Co.'s No. 14 Cartwright, 1,000 ft. W of No. 23 Cartwright.....T. D. 5,400 ft.; standing.

CHITTIM POOL—MAVERICK COUNTY

Texas Gas Utilities' No. 8 Chittim, 24 ft. S of No. 7 Chittim .....T. D. 4,810 ft.; shut down.

TAYLOR FIELD—MEDINA COUNTY

Medina Oil & Refining Co.'s No. 2 R. T. Taylor, 1,700 ft. from N line, 1,050 ft. from E line of Bruchet Sur. No. 135 .....T. D. 350 ft.; complete 5 bbls.

SAXET FIELD—NUECES COUNTY

Gulf Coast Oil Co.'s No. 1 Sagarin.....T. D. 3,775 ft.; drlg.

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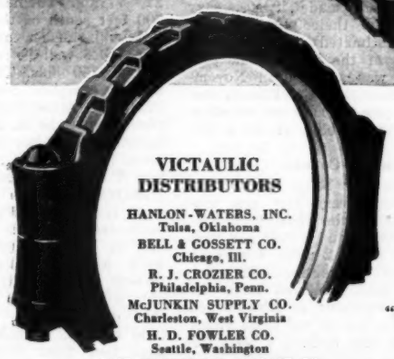

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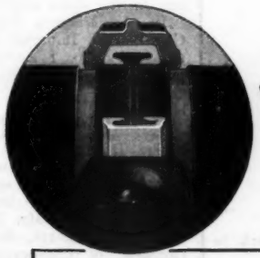

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Gulf Coast Oil Co.'s No. 1 Elder, NW of same company's No. 1 Harrell.....T. D. 4,705 ft.; drlg.
Neal-Milton and Kepley Pet. Co.'s No. 1 J. N. Roark, 200 ft. to S line, 200 ft. to E line of 106-ac. tract.....T. D. 4,636 ft.; making drill stem test.
Saxet Oil Co.'s No. 1 McCampbell, 600 ft. from N and 1,900 ft. to W lines of tract.....T. D. 2,545 ft.; drlg.
Southern Drilling Co.'s No. 1 Alexander.....T. D. 3,240 ft.; drlg.

SINTON POOL—SAN PATRICIO COUNTY

Welder Oil Corp.'s No. 2 Welder, 800 feet NE of No. 2...T. D. 1,500 ft.; drlg.

WELDER FIELD—SAN PATRICIO COUNTY

Welder Oil Corp.'s No. 3 Welder 800 ft. NE of No. 2 Welder.....T. D. 1,500 ft.; drlg.

WHITE POINT POOL—SAN PATRICIO COUNTY

Saxet Oil Co.'s No. 18 Rachel.....Making location.

LOS OLMOS POOL—STARR COUNTY

Los Olmos Oil & Gas Co.'s No. 1 Seabury, 1,800 ft. to S line 175 ft. to E line of 686-ac. tract in Porcion 75..T. D. 366 ft.; set csg., waiting on cement.

CAROLINA-TEXAS POOL—WEBB COUNTY

George S. Marshall's No. 1 Benavides, 660 ft. from S line, 150 ft. from E line of Sur. 683.....Temporarily abnd.

COLE POOL—WEBB COUNTY

French Oil Corp.'s No. 4 R. Benavides, 1,945 ft. from N line, 150 ft. from W line of Sur. 659.....T. A. 1,200 ft.; drlg.
Magnolia Petroleum Co.'s No. 5 A. Benavides, 1,945 ft. from N line, 150 ft. from E line of Sur. 660.....T. D. 2,335 ft.; waiting on cement.
O. W. Killam's No. 21 Bruni, 1,020 ft. to SW line, 170 ft. to NW line of Sur. 5.....Location.

CHAPMAN POOL—WILLIAMSON COUNTY

Westbrook Oil Corp.'s No. 3-A Lawrence, 150 ft. from S and E lines of tract in S. Miller Sur.....Abnd.

ESCOBAS POOL—ZAPATA COUNTY

Trevino Oil Corp.'s No. 11 Trevino, 560 ft. N of E cor., 150 ft. from E line of Block 5, Sur. 65.....T. D. 1,215 ft.; complete 25 bbls.
E. K. Bateman's No. 1 M. Garza, in Comitas grant.....Making survey.
Trevino Oil Corp.'s No. 12-A Trevino 665 ft. to S line 550 ft. to W line of Block 15, Survey 412.....Rigging up.

KILLAM-CUELLAR POOL—ZAPATA COUNTY

O. W. Killam's No. 28-A Cuellar, in Cerrito Blanco grant.T. D. 1,558 ft.; abnd.
O. W. Killam's No. 29-A Cuellar, in Sur. 277.....Location.
O. W. Killam's No. 30-A Cuellar 570 ft. to NE line 1,720 ft. to NW line of Cerrito Blanco grant.....T. D. 220 ft.; drlg.

WILDCAT OPERATIONS IN OKLAHOMA

(Continued from Page 34)

Ault et al's No. 1 Hall, SE NW, Sec. 25-9-19.....Shut down 200 ft.
Holden's No. 1 Phillips, SE cor., Sec. 3-9-18e.....Shut down 1,860 ft.
Marion Oil's No. 1 Sanders, NW NE NW, Sec. 10-9-18e...Shut down 3,387 ft.

HUGHES COUNTY

Wright et al's No. 1 Ott, SE SW, Sec. 15-5-11.....Shut down 1,645 ft.

KAY COUNTY

Lewis et al's No. 1 Harris, SE NW, Sec. 14-25-1.....Location.
Mummert Drlg. Co. et al's No. 1 Cormick, C NW SE, Sec. 9-27-3.....Shut down 3,693 ft.
Blackwell Oil Co.'s No. 1 Harshman, Sec. 2-26-1w.....Rig on ground.

KIOWA COUNTY

Christian's No. 1 Jones, NE SE, Sec. 8-7-18w.....Shut down 820 ft.

LATIMER COUNTY

P. English's No. 1 Unknown, NW SE, Sec. 16-6-19.....Shut down 1,542 ft.

LINCOLN COUNTY

Hilton Phillip's No. 1 Phillips, SW NW Sec. 2-14-3.....Rig.
Mote et al's No. 1 School Land, NW cor., Sec. 36-17-5....Drlg. 250 ft.

McINTOSH COUNTY

Patterson et al's No. 1 Smith, SW cor. NW SE, Sec. 32-9-16.....Drlg. 5,766 ft.

MURRAY COUNTY

Capitol Prod. Co.'s No. 1 Cutchall, SE NE, Sec. 6-1-2....Drlg. 2,308 ft.

MUSKOGEE COUNTY

Sioux Oil Co.'s No. 1 Unknown, NW SE, Sec. 21-11-19...Shut down 1,011 ft.

OKFUSKEE COUNTY

Shepard et al's No. 1 Nevens, SE NW SW, Sec. 3-12-10...Shut down 3,638-90 ft.; Wilcox sand; hole full water.

OKLAHOMA COUNTY

Citizens Oil Co.'s No. 1 Sage Barber, NE cor., Sec. 21-11-3w.....Shut down 1,200 ft.
L. C. Hivick's No. 1 Sunset Addition, NW SW NW, Sec. 17-11-3w.....Shut down 5,515 ft.
J. F. Cuniff, trustee's No. 1 Church Land, NE NW SE, Sec. 17-13-4w.....Shut down 4,700 ft.

PAWNEE COUNTY

Rockstool's No. 1 Wylie, NW NE SW, Sec. 6-20-5.....Shut down 1,950 ft.
Cochran et al's No. 1 Green, NE cor. SW, Sec. 15-21-5....Rig.

PITTSBURG COUNTY

Tape Oil Co.'s No. 1 Fulton, SE, Sec. 34-7-14.....Shut down 1,200 ft.
J. Morrison's No. 1 Fowler, NE SE, Sec. 12-7-17.....Rig.
C. Kennedy's No. 1 Travis, C SW NE, Sec. 15-7-14.....Rig.
C. Canady's No. 1 Jones, NW cor., Sec. 14-8-14.....Rig.

ROGER MILLS COUNTY

Ute Oil Co.'s No. 1 Williams, C SW, Sec. 23-12-24w.....Shut down 5,150 ft.
L. C. Hivick's No. 1 Davis, C NW NE, Sec. 4-11-26w.....Shut down 3,275 ft.

SEQUOYAH COUNTY

Braman Oil Co.'s No. 1 Unknown, C NW SW Sec. 29-12-22.....Drlg. 325 ft.

WASHITA COUNTY

Cooper & Terhune's No. 1 Blocker, NW cor., Sec. 29-8-19w.....Shut down 2,440 ft.
Burns & Prince's No. 1 Deck, SW cor., Sec. 21-8-15.....Shut down 1,140 ft.

OKLAHOMA PANHANDLE

TEXAS COUNTY

Three Way Oil Co.'s No. 1 Crane, SW NW, Sec. 11-1-1S..Shut down 4,750 ft.

SOUTHERN OKLAHOMA

ATOKA COUNTY

Morris et al's No. 1 Mansell, SW NW NW Sec. 9-2s-12 ...Drlg. 100 ft.
Brookshire's No. 1 R. W. Rowland, NW NE SE, Sec. 18-3s-10.....Shut down 1,530 ft.

BRYAN COUNTY

Bryan County Oil's No. 1 Childs, NW SE SW, Sec. 7-7-10..T. D. 650 ft.
Bush et al's No. 1 Commerce Trust, NE cor., Sec. 35-6s-9.....T. D. 740 ft.; plugged back to 450-80 ft.

JEFFERSON COUNTY

Smith's No. 1 McCarty, SE NW NE, Sec. 15-4s-8w.....Location.

JOHNSTON COUNTY

Gilbreath's No. 1 Readen, SE NW NE NE Sec. 17-4s-5 ..Aband. 800 ft.

LOVE COUNTY

Autrey et al's No. 2 Cross, CWL SE NE, Sec. 27-6s-2.....Show oil and gas 970-73 ft. and 1,324-34 ft.; shut down; T. D. 1,634 ft.

MARSHALL COUNTY

Summers-Sellers' No. 1 Beams, NE SW NE SW Sec. 20-7s-5.....Rig.
Dixson's No. 1 McDuffel, SW SE, Sec. 3-7s-6.....Drlg. 863 ft.
Taliaferro et al's No. 1 fee, NW SE Sk NW, Sec. 34-5s-5.....Shut down 580 ft.

McCURTAIN COUNTY

The Oil Journal's No. 1 Parks, C NE SW, Sec. 17-4s-23..Drlg. 1,001 ft.
Stewart's No. 1 Patterson, C SE SE, Sec. 7-4s-24.....Shut down 756 ft.

PUSHMATAHA COUNTY

George's No. 1 Lane, NW SE, Sec. 32-2s-15.....Shut down 840 ft.
Whitehead et al's No. 1 Messer, SE SW SW, Sec. 35-3s-18.....Rig.

STEPHENS COUNTY

Brown's No. 1 Hightower, SW SE NE, Sec. 15-3s-5w.....Sand 990-1,004 ft.; show oil.

WILDCAT OPERATIONS IN KANSAS

(Continued from Page 35)

KINGMAN COUNTY

Skelly Oil Co.'s No. 1 Miles, NE cor., Sec. 30-27-10w.....1,625-40 ft. 2,000,000 ft. gas; 2,005-20 ft. 6,000,000 ft. gas; 2,133-42 ft. 3,000,000 ft. gas; showing oil 3,385 ft.; T. D. 3,4 ft.; shut down; estimated 600 bbls. a day.
Panhandle Drilling Co.'s No. 1 Wetherall, C SE NW SW Sec. 20-28-10w.....Rig.

MORTON COUNTY

Hydraulic Oil Co.'s No. 1 State Land, NW SE, Sec. 32-34-43w.....T. D. 3,640 ft.; temp. abnd.

MORRIS COUNTY

Allender et al's No. 1 Wycoff, C SW SE, Sec. 5-17-7.....Shut down 105 ft.
Urschel et al's No. 1 Berauch, NW SE NW, Sec. 10-17-7..Machine.
Hankerson et al's No. 1 Cessman, SW SE, Sec. 24-16-9...Shut down 2,625 ft.

NORTON COUNTY

Richards et al's No. 1 Colby, Sec. 17-4-21w.....Rig.

OSAGE COUNTY

Briggs & Smith's No. 1 Wood, SE NW, Sec. 21-14-16.....Shut down 2,058 ft.

RAWLINS COUNTY

J. G. Durham et al's No. 1 Weaver, SE cor., Sec. 3-2-35w..Drlg. 3,890 ft.

RICE COUNTY

Detrick & Langston's No. 1 Purcell, NW cor., Sec. 33-
Cress et al's No. 1 Sharp, SE NE, Sec. 13-20-10w.....Show oil 3,107-15 ft.; Siliceous 3,320-36 ft.; estimated 1,5 bbls.; shut in.

RUSH COUNTY

Dewey & Mitchell's No. 1 Greenawalt, C SW, Sec. 17-19-16w.....Show of oil in Conglomerate 3,8 80 ft.; plugged back to 3,81 ft.; estimated 150 bbls.; sh down.

RUSSELL COUNTY

Agate Oil & Gas Co.'s No. 1 Rochfellow, SE cor., Sec. 6-13-12w.....Shut down 3,374 ft.

SALINE COUNTY

Twin Mounds Oil Co.'s No. 1 Wels, C W half NE NW, Sec. 20-13-4w.....Fishing 2,710 ft.

SHERIDAN COUNTY

Flo et al's No. 1 Shoemaker, SE SW, Sec. 27-7-26w.....U. R. 3,280 ft.

STAFFORD COUNTY

Roesenthal, Stanolind and Amerada's No. 1 Gray, C NE, Sec. 11-24-13w.....Drlg. 3,495 ft.

STEVENS COUNTY

Argus Prod.'s No. 2 Christopher, C NE, Sec. 10-33-39w...Shut down 5,521 ft.

SUMNER COUNTY

Tighe et al's No. 1 Thieson, C NW SE SE, Sec. 22-34-2...Shut down 2,395 ft.
Trees Oil Co. and Shell's No. 1 Springate, NE SE SW, Sec. 6-34-2.....Drlg. 2,228 ft.
Spencer et al's No. 1 Porter, NE SW, Sec. 12-33-3w.....Drlg. 3,677 ft.
Otstot et al's No. 2 Marlow, C SE NW SE, Sec. 22-33-3w..Simpson sand 4,535-48 ft.

WASHINGTON COUNTY

Sincox et al's No. 1 Penwell, NW SE NE, Sec. 16-3-3....Shut down 1,720 ft.

CENTRAL WEST FIELDS

(Continued from Page 48)

in the field's history. While a number of the larger operators wanted to hold out for $1 a barrel, the resumption of pumping by others made it necessary for them to start their pumps again. The present estimated production is about one-third of the field's peak production, which was attained in November, 1929. At that time the Illinois and the Producers pipe lines were handling approximately 18,000 bbls. of oil a day in the field.

Hancock County

Hancock County is being tested more for gas and some very fair gas producers are found in the vicinity of Victoria. Dug Bolling found a fair gas well on an unknown farm, 2 miles southwest of Victoria, and Brewer and Thrasher also found a good gas well near the same hamlet. Swarthout & Rhodes are making a test for gas in the same vicinity. Ira Huff is also drilling a well for gas in the same county.

In the Niagara Pool, in Henderson County, the Imperial Oil & Gas Products Co.'s No. 1 Aaron Freeman farm, pumped 20 bbls. initially, while No. 2 same farm, produced an initial of 25 bbls.

MICHIGAN

The Department of Conservation of Michigan at Lansing is doing all in its power to protect the oil and gas-producing territory of the State. State Geologist Smith and Mr. Frye as well as George R. Hogarth, director of the Department of Conservation, are making every effort to see that all wells drilled, not productive of oil or gas, are properly plugged. No wells can be drilled without a drilling permit.

There is only one producing field of importance at this time in Michigan, the Mount Pleasant Field in Isabella and Midland Counties, where some large oil wells have been found as well as gas producers.

Two Completions

Two completions were reported from the Michigan Field, during the week both being in the Vernon Field, in Vernon Township, Isabella County, one a large oil producer and the other a fair gas well.

The Vernon Field, approximately 12 miles north of Mount Pleasant, commanded the chief attention in development work. In this field, the Mellon-Pollock Oil Co. brought in No. 1 on the John Brief farm, N half SW, Section 22, Vernon Township, which is about 700 feet south of the recently completed 2,500-bbl. gusher on the Woods farm. The Brief well is reported with an initial of 750 bbls. This company is also due to complete No. 1 on the Thayer 120 acres, same section. The other completion was the E. Brown Oil & Development Co.'s No. 1 Homer Campbell farm, in the C NE NE, Section 35, Vernon Township, where a gas well with 1,700,000 feet was found in the Marshall formation. Walter McClanahan is connected with this development. There may be a possibility that each of these wells will be drilled deeper. At the present time the Brief farm well probably will be allowed to flow without further drilling. The well, according to field reports, is making its 30 bbls. an hour flow from only a short depth in the oil sand. Owners are well aware of the thin strata between the oil sand and brine. Deeper drilling might boost the flow, although it might break into brine. The Brief well is only a short distance south of the Woods, which when drilled in about six weeks ago flowed 2,500 bbls. of oil the first 24 hours and showed a little decline for several days. According to recent reports the Woods has fallen off more than half and water has made its appearance in the oil production.

The well on the Russell farm, same section, owned by the Meridian Oil & Gas Co., in the Vernon Field, and other wells in the pool have been hurt for their commercial value by salt brine. The Brief farm well was started on the heels of the big Woods strike and marked the first of the newer projects to be completed since the Woods well.

Seeking Heavier Pay

Drilling was expected to be continued on the Campbell gas well in an attempt, regarded favorable, to break into a heavier pay gas formation. The Campbell well is between two other good producers. It marked the seventh successful gas drilling project in the Vernon Field. The Vernon wells, of which there are eight, have an aggregate potential daily

flow of about 16,000,000 feet. From this area the Gas Corp. of Michigan is piping its gas for commercial use in Clare, Mount Pleasant, Rosebush and several farm homes. The best of the Vernon wells is the Scott farm well No. 1 which gauged 4,100,000 feet.

CANADIAN FIELDS

(Continued from Page 42)

structure west of Calgary. Further south, Elbow Oils' No. 1, LSD 11, Section 35-22-5w5, is at 3,190 feet and preparing to run casing, which has been held up by bad roads. On the North Waite Valley structure, Cotton Belt Mines' No. 1, LSD 5, Section 21-21-4w5, is drilling below 2,220 feet and running three towers. A gas flow estimated 1,000,000 feet was struck at 2,070 feet on top of the Dalhousie sand, and the drill is now working in that formation with traces of oil reported.

Hudson's Bay Tests

In the Keho Lake area, southern Alberta, Hudson's Bay Oil & Gas Co.'s Keho No. 1, LSD 2, Section 17-11-22w4, is drilling below 4,740 feet, after some trouble with a damaged shoe. The drill is close to the Ellis formation, which overlies the Madison limestone, and oil is regarded as possible either in the Ellis or at the Ellis-Madison contact.

Border Fields

In the Milk River area, Commonwealth Petroleums' No. 1, LSD 9, Section 9-3-15w4, is drilling around 5,000 feet in a shale formation which shows considerable oil impregnation. At this depth the test is near the bottom of the Devonian formation, which has been continuous from 3,485 feet. It is planned to drill through the Devonian into the underlying formation, for a thorough test.

On the Twin River structure, Parco Oil Co.'s No. 1, LSD 16, Section 34-1-20w4, is making new hole after setting 13⅜-inch pipe at 2,678 feet in a shale formation.

East of Coutts, on the international Reserve Dome, Mayland Southern's No. 1, LSD 13, Section 4-1-9w4, is drilling below 2,450 feet and getting close to the Sunburst sands.

Near the town of Brooks, Canadian Western Natural Gas Co. has derrick up for a test for gas to supplement the local supply.

Medicine Hat Gasser

In the Medicine Hat municipal field, a third test for gas drilled by the municipality in the extension of the main field east of the city, has come into production with an estimated flow of 3,200,000 feet a day from the Medicine Hat sand. The estimate is unofficial, but exact flow and pressure measurements are being made by C. W. Dingman, government engineer. This is the third producing well drilled in the new area some miles northeast of the city, the wells there having proven considerably larger than those in the older field.

Red Coulee Field

On the Montana end of the international Red Coulee structure, Askalta Oils' No. 2 Farbo, SW NE Section 2-37-4w, is reported drilling below 950 feet. Askalta's No. 1 Farbo is making 225 to 250 bbls. a day.

Efforts are being made to complete No. 2 Capitol Oil & Natural Gas Co. of Vancouver, British Columbia, in the Red Coulee Field. Capitol's No. 1, LSD 4, Section 4-2-12w4, on the Milk River structure, was lost at 600 feet; but No. 1-A, LSD 16, Section 31-1-12w4, on the same structure, was carried to 3,520 feet, where it has been standing cemented. This structure is still being tested at a point further north by Commonwealth Petroleums, Ltd., of Calgary. Capitol's No. 2 was drilled in LSD 3, Section 21-1-16w4, in the Red Coulee Field. The test has been standing cemented at 2,753 feet, after encountering some encouraging indications.

Ontario Drilling

In the Ontario fields, Union Gas Co.'s No. 1 Ekfrid, Lot 7, Concession 5 South, Ekfrid Township, Middlesex County, is reported drilling around 2,850 feet on a test which is planned to go through the Trenton lime to the granite.

In Kent County, Olga Oil & Gas Co.'s No. 3, Lot 19, Concession 8, Raleigh Township, has spudded in. Location is about 1,150 feet west and a little south of Olga's No. 1, which got a small commercial gas production at 1,507 feet. No. 3 is drilling about 400 feet.

In the old Tilbury Field, Southern Ontario Gas Co. has spudded in a new test in SW Lot 4, Concession 16 Tilbury East Township. Further south, Southern Ontario Gas Co.'s lake well opposite the line between Lots 184 and 185, South Talbot Road, Romney Township, is being abandoned and plugged. This well is east of the new lake well recently completed by the Southern Ontario Gas Co.

In Lambton County, F. J. Marchant, driller, of Petrolia, is reported to have encountered a strong show of crude oil at shallow depth in a test in Warwick Township 2 miles west of Watford. Location is on the Mary Wynne farm, Concession 2 South. The test is reported drilling around 345 feet, and will be carried to about 500 feet for larger production in the lower lime.

OKLAHOMA FIELDS

(Continued from Page 34)

Section 6-5-9w, on the west side of the Cement Pool, in Caddo County, is shut down at 10,079½ feet in gray, sandy lime, awaiting a string of 6⅝-inch casing which will be landed at approximately 9,800 feet, which is the longest string of casing ever run into a hole in the Mid-Continent Field. A test will be made of the formations between 9,800 feet and 10,079½ feet, where several showings of gas have been found. The operators are not certain at this time whether the test will be drilled deeper in search of the Wilcox sand or whether it will be plugged back to some of the upper formations which had showings of oil and gas. In landing the 9,800 feet of 6⅝-inch casing 20 tons of ice will be used to reduce the temperature at the bottom of the hole. The test is almost 2 miles deep and engineers have estimated that the temperature at the bottom of the 10,079½-foot test would be approximately 200° F. The heat, it is believed, would cause the cement to set inside of the casing before it reached the bottom of the hole. The formation at the bottom was so hard that the drilling crew was unable to make more than a few feet of hole in 24 hours. Early in the week the drill stem twisted off, but after a six-hour fishing job it was recovered in the well at shallower depths and if deeper production is not found the casing will be ripped to test the showings.

Southern Oklahoma

Reports from southern Oklahoma indicate that the development of the oil and gas reserves in that section continues at a steady rate. Another producer was completed in the Comanche area and lease transactions are active. J. C. Chambers and others' No. 1 M. Dare, SE cor. NW SE Section 2-2s-8w, on the north side of the Comanche Field in Stephens County is estimated to be a 100-bbl. well. The owners are rigging up to pump. It swabbed 40 bbls. of oil at the rate of 6 bbls. an hour from sand at 1,352-68 feet.

The Lone Star Gas Co. has purchased from Clark & Cowden the NW of SE of Section 31-1-8w, in Stephens County, for an unnamed consideration. On the property is a gas well estimated to be making 1,000,000 feet of gas a day and a dry hole in the shallow sand.

The lack of water is hindering the development work in the southern part of the State and few operations are able to start at this time until the ponds and streams are filled by a rain.

The Murray Petroleum Co.'s No. 1 Wilkerson, SE cor. NE SE Section 8-1s-5w, a wildcat about 5 miles south of Duncan, was drilling at 810 feet and was the only drilling operation in the county.

Leasing Becomes More Active

The leasing of acreage in the State is increasing after several months of inactivity. The lease play recently has been centered in three counties and on the edges of the Oklahoma City area, namely, Creek, Lincoln and Noble. Notwithstanding the wide practice which has been in operation in the Mid-Continent Field during the last eight months of surrendering wildcat acreage and reducing rentals, there has been an increase in the leasing of acreage in portions of Payne, Pawnee and Logan Counties. It is believed that geology has been an important factor in determining where leases should be secured. Seismograph machines operating in the older areas are believed to be partly responsible for the increased interest.

The edges of the Oklahoma City area continue to be active, with several attempts made to assemble city blocks for development. Recent transactions include the following: Skelly Oil Co. has leased Lots 1 to 16 and Lots 25 to 28 in Block 8, Carney Heights, and Lots 25 to 28 and 33 and 34 in Block 13, Carney Heights. E. E. Rogers leased Lots 5 and 8, Earp Addition, and Blocks 1 to 4 in South Glendale. H. L. Guild leased Lots 17 to 22 in Block 7, Spencer's Addition. Mid-Texas Petroleum Co. leased Lots 13 and 14 in Block 33, Park Place. Phillips Petroleum Co. leased Lots 12 and 13, Block 20, Eckroat Addition. Gulf Production Corp. leased Lots 15 and 16, Block 1, Banner Addition. W. B. Skirvin leased part of the SE, Section 34-13-3w. Payne Oil Corp. leased Lots 3 to 36 and 39 to 44 in Block 71, Shields Addition. M. K. Owndey leased Lots 1 to 5 and 16 to 20, Block 2, Acreton Addition, and E half, Blocks 5 to 8, Earp's addition, and Blocks 1 to 4 in South Glendale.

In Noble County The Texas Company leased the SW, Section 16-20-2w; the Twin State Oil Co., N half SW, Section 24-21-2; G. H. Mouser, NE, Section 18-22-1; Gypsy Oil Co., W half NE, Section 18-21-3; E. Gorath, W half SW, Section 29-21-1; Charles Webb, SW, Section 15-21-3; W. O. Allen, SE, Section 9-20-2w; Joe Lathrop, S half SW, Section 24-21-2; T. N. Berry, W half SE, Section 12-21-2; Prairie Oil & Gas Co., E half SW, Section 27-23-2. In Lincoln County the Mid-Continent Petroleum Corp. leased the W half SE SW NE, Section 7-15-4; the Prairie Oil & Gas Co., the N half NW SE NW, and W half NE NW, and SE NE SW, Section 15-12-5. The Mid-Continent Petroleum Corp., S half, SE, Section 4-15-5; J. H. Wiggins, SE, Section 30-17-3, and N half NE, Section 31-17-3, and S half NW, Section 30-17-3, and SW NW, Section 29-17-3. W. O. Allen leased the W half NW, Section 35-15-2; W. M. Mote, W half SE, Section 35-17-5; Gypsy Oil Co., E half NW, Section 17-15-4; J. W. Macy, S half NE, Section 17-15-4; F. V. Miller, W half NW, Section 17-15-4; Cushing Oil & Refining Co., NE NW, Section 35-17-5; J. A. Ingram, E half NW, Section 19-13-4; W. O. Allen, N half NW, Section 17-15-3.

Some leasing has taken place in scattered areas in the State in Seminole, Canadian, Cleveland, Stephens, Pontotoc and Carter Counties.

Oklahoma City Shipments

The total shipments from the Oklahoma City Field for the week ending October 10 were 91,857 bbls., an average of 13,122 bbls. The shipments by companies were as follows:

Company—	Bbls.
Champlin	1,658
Empire	11,674
Magnolia	6,200
Shell	5,456
Stanolind	23,719
Oklahoma	6,509
Sinclair	15,862
Healdton	2,406
Tidal	18,373
Total	91,857

The daily production and pipe line shipments from the Oklahoma City Field for the week ending October 10 were as follows:

Date—	Prod.	Wells	Shipments
October 4	1,076	6	3,497
October 5	472	5	2,313
October 6	456	6	6,016
October 7	494	6	18,242
October 8	598	6	23,830
October 9	550	6	10,265
October 10	9,275	7	27,644

In the Tatums Pool

In the Tatums Pool, in Carter County operations were expected to be resumed in a short time since the field has been reopened. Two new tests which are expected to be started in a few days are G. Pace and others' No. 2 Mitchell, SW cor. NW NW Section 30-1s-2w, on the southeast part of the field and the Chickasaw Natural Gas Co.'s No. 1 J. Carter, SE cor. NW NW Section 13-1s-3w.

Seminole Production

The production from the Greater Seminole area for the week ending October 10, was approximately 64,890 bbls. The first 12 pools listed below comprise the Seminole area which averaged 41,815 bbls.

Pool—	Bbls.
Little River	9,655
East Little River	1,430
Carr City	5,195
Maud	920
Mission	1,725
Bowlegs	4,610
Earlsboro	8,245
South Earlsboro	3,415
East Earlsboro	2,130
Seminole	1,310
East Seminole	1,045
Searight	2,135
Total	41,815
Allen	4,970
Asher	760
Wanette	1,510
Konawa	1,455
Sasakwa	1,810
St. Louis-Pearson	12,570
Total	64,890

Creek County

Kirchner and others made location for No. 1 Strip, SE cor. NE, Section 13-19-8. Liberty Pipe Co.'s No. 1-A Land, NW cor. SW, Section 12-18-11, is spudding. Shamblin & Smith and others' No. 1-A Cloud, SE cor. NE NE SE, Section 21-15-8, is a machine rigging up. F. R. Billingslea's No. 3 Wayman, NE cor. SW NW, Section 22-15-8, is drilling at 510 feet. Magnolia Petroleum Co.'s No. 1 Talomasse, SE cor. NW NE, Section 3-16-7, has been abandoned at 2,936 feet.

Muskogee County

H. L. Jolly's No. 3 Spaulding, SE cor. NE SE NE, Section 8-15-18, is drilling at 115 feet.

Okmulgee County

Tiffany Brothers' No. 2 L. Somins, SE cor. NE SW, Section 25-16-11, is spudding. McNutt & Davis and others moved a machine in for No. 1-A J. Smith, SE cor. NW NW, Section 29-13-13. Shamblin & Smith's No. 1 Sharp, CSL SE SE, Section 31-16-12, has been completed for 20 bbls. in sand 2,184-92 feet, total depth 2,200 feet.

Oklahoma County

Anderson & Kerr and others' No. 1 Black, NE cor. NW NW, Section 10-11-3w, Oklahoma City Pool, is a cellar. Anderson & Kerr and Continental Oil Co.'s No. 1 Metcalf, SE cor. NE SW, Section 15-11-3w, is a rig under construction. No. 1 Shields, NE cor. SE SW, Section 15-11-3w, is also a rig under construction. Skelly Oil Co. has the cellar dug for No. 1 Ledbetter, SW cor. NE NW NE, Section 22-11-3w. T. B. Slick estate's No. 2 Classen-Edwards, CWL E half SE SW, Section 3-11-3w, made 10,988 bbls. in 8 hours producing from Wilcox sand 6,346-6,503 feet, total depth 6,511 feet. T. B. Slick estate and Wofford Drilling Co.'s No. 1 Curtiss, NW cor. SE NW, Section 3-11-3w, topped Wilcox sand at 6,340 feet, drilled to total depth 6,476 feet and flowed 16,808 bbls. in 8 hours. T. B. Slick estate's No. 1 Terminal, SE cor. NW SE NW, Section 3-11-3w, has been completed for 5,423 bbls. in 4 hours from Wilcox sand 6,335-6,520 feet, total depth 6,546 feet.

Pawnee County

Arkansas Utility Co.'s No. 2 Nielson, CSL NE SW, Section 27-21-8, is a machine rigging up. Sherry and others' No. 1 Millsap, SE cor. SW, Section 2-22-5, is dry and abandoned at 3,552 feet. Arkansas Utility Co.'s No. 1-A Nielson, NW cor. SE SW, Section 27-21-8, has been completed for 5,500,000 feet of gas in Peru sand 2,179-89 feet.

Stephens County

H. J. Brown's No. 2 Hightower, SW cor. SE SE NE, Section 15-3s-5w, has rigged up and shut down.

Tulsa County

Mays Drilling Co.'s No. 5 Brooks, SE cor. NW SE NW, Section 2-18-13, made 10 bbls. in Turkey Mountain sand 2,125-45 feet.

Wagoner County

Braman Oil Co. moved a machine in for No. 1 F. Colbert, NW cor. SW, Section 32-18-17. F. D. Helshel's No. 2 Apueka, SW cor. NW, Section 6-17-15, has been abandoned at 1,390 feet.

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Tulsa, Oklahoma

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OIL located before drilling. Geophysical method. Toggodometer Instrument; take pay in oil. No oil, no pay, except traveling and testing expenses. 95 per cent accuracy. O. P. Coffin, Caddo, Tex.

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Casing, Linepipe, Boilers, Engines, Compressors, Derricks, Tanks, Separators, Rig Irons, Pumps, Gasoline Plant Equipment, Fittings, Valves, etc.
Low prices and quality merchandise.

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Phone 5-3263
TULSA, OKLAHOMA

FOR SALE—One Armstrong spudder No. 25 special. Traction with part string of tools all in good shape, good for 1,500 ft., bargain for quick sale. O. M. Brooks, Box 433, Albany, Texas.

FOR SALE—One 4-inch U.G.-1 Worthington 3-stage centrifugal pump—with 9⅝-in. dia. impeller base and coupling. At bargain price. Address Box E-600, The Oil and Gas Journal, Tulsa, Okla.

EQUIPMENT WANTED

WANTED TO BUY one used set of official A. P. I. Cable Drilling Tool Joint Master Gauges size three to five inch. Answer Box E-561, The Oil and Gas Journal, Tulsa, Okla.

WANTED TO BUY — Second-hand Westinghouse Upright 12x12 or Ingersoll-Rand 9x9x8 Air Compressor. Must be in good condition and a bargain. 907 Aviation Bldg., Fort Worth, Texas.

INCORPORATIONS

CHARTERS — Delaware best, quickest, cheapest, most liberal. Free forms. Colonial Charter Co., Wilmington, Del.

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NEED SOME MORE GOOD CORRESPONDENTS in every city of United States and Canada to co-operate with me in selling producing and nonproducing royalties. Write, James R. Haynes, Grantville, Kans.

LAND, the source of all wealth, the only safe investment, all royalty—on structure—new survey adjoining location—oil fields—Oklahoma County—best geology—three 40-acre tracts—one 40 sells in $100 shares. Geo. W. Seckman, Edmond, Okla.

BLOCKS OF ACREAGE for test well in Bell County, Texas, and adjoining counties. Geologically recommended. A. L. Monteith, Belton, Texas.

$8.00 buys deed part oil 10 ac., Okla. County. Many wells now drilling. Joe Milam, Dept. A-B, Oklahoma City, Okla.

$12.50 Buys deed part oil 2 Oil Royalties City Pool. Ed Milam, Dept. 24, Oklahoma City, Okla.

WANTED — Large tract of wildcat acreage in Rocky Mountain area. Give full details and legal description in first letter. Dale S. Johnson, 10 South LaSalle St., Chicago, Ill.

SAFETY FIRST
You can own, control, highly profitable production and sale in natural gas. Small capital starts you. $2,000 or $3,000 ample. Proven acreage. Excellent market, four public utility pipe lines buying. Four producing sands, deepest only 600 feet. Write H. B. Buddenborg, Parker, Kans.

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Tioga (Northern Pennsylvania) Gas Field wells average over 20 million feet per well. Low drilling cost. Blocks 1,000 to 10,000 acres surrounded by many drilling wells. Maps on request. P. O. Box 104, Wellsboro, Pa.

EAST TEXAS FIELD—Wanted connections for financing wells, also handling oil payments. Have royalty bargains direct. John C. Robbins, Jr., Suite 6, Stuckey Bldg., Longview, Tex.

MONEY RAISING

DO YOU NEED MONEY for organizing or financing oil or mining deals? Write 2443 N. W. 12th, Oklahoma City.

CORPORATE ORGANIZING AND FINANCING
BROOKWORTH,
110 East 42nd St., New York.

JAMES E. MILLER CO. will co-operate with responsible firms or parties seeking aid in financing projects of higher order. Suite 200, New Brady Hotel, Tulsa, Okla.

JOHN MORRIS, 3608 WARREN ST., PHILADELPHIA, PA., invites full facts first letter from capable parties planning negotiation of reasonable capital support for undertakings distinctly of higher order. Use registered mail, safeguard data.

FINANCE YOUR OWN project with shares bonded. Quickest, most satisfactory known method of raising capital. Information free. Bankers Interstate Security, Electric Bldg., Denver, Colo.

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We have the only complete line of general area, lease ownership and oil development maps in East Texas.

Prices on Request

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LEASES—PRODUCTION

WILL BLOCK leases Montgomery County, Miss. (well defined structure). High-gravity, paraffine base oil. 217 Court, Memphis, Tenn.

FOR SALE—Gas leases on structure Kentucky and Tennessee. Can furnish blocks of from 100 to 150,000 acres. A. W. Richards, Box 239, Bowling Green, Kentucky.

WANTED seismic shot holes, shallow production and core drilling. Ritter and Dugan Drilling Co., Perry, Okla.

WILL PAY cash for large producing Gas property. Owners only. Address Box E-557, The Oil and Gas Journal, Tulsa, Okla.

We offer Producing Gas Properties in Ky., O, and W. Va.
ED E. WALKER & CO.
519 Madison Ave. Covington, Ky.

LEASE for Oil, 2,400 acres in Block A, Coke Co., Tex. $5 cash and $15 in oil and gas. Joseph Manz, Olmitz, Kans.

FOR SALE—Renewable 5-year Oil and Gas Lease, 40 acres, Sec. 32, Township 18 South, Range 34E, Lea County, New Mexico. Conrad well drilling Sec. 22, submit offer. Address Elizabeth Kendall, 635 W. 43rd St., Los Angeles, Calif.

EAST TEXAS
SHELBY COUNTY OIL LEASES
Have secured a few well located tracts, at low prices. Shelby is getting a big play. Quick action required. W. E. Priddy, Longview, Tex.

WILL SELL PART of my 80-acre lease near well starting in southeastern Oklahoma. Address RAY FARBRO, Box 934, Texarkana, Tex.

FOR SALE
Ten-year oil and gas lease, six sections northeast Panhandle, Texas. Address or call, H. S. COOK, MAITLAND, MO.

OIL leases for sale, Harvey County, Kansas, offsetting well now being drilled down about 2,000 ft.; excellent showing; good structure; core drilled by major company. Address R. E. Henry, Bonner Springs, Kans.

FOR SALE—Sec. 8, Blk. 38, Andrews Co., Texas. Midway Hobbs and Ogden Pools. 4 miles west Penn et al Wilson well which made heads. Geology good. Lease paid this year. Clears $220 per year in rentals. 10-year lease with 6 years to run. $3,000 cash. W. T. Stiles, Floydada, Texas.

EDDY COUNTY, NEW MEXICO
Oil and Gas Leases
I offer tracts 40 acres up to 640 acres at very close prices and solicit inquiries from brokers, oil companies and investors. Address Frank Strickland, Sapulpa, Okla.

ROYALTIES—PRODUCTION

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Service to dealers, Oklahoma, Kansas and East Texas.

PRODUCTION, and nonproducing gas royalties, Stevens County, and Panhandle fields, Kansas, Oklahoma and Texas royalties. Special service for brokers. List and maps. James R. Haynes, Grantville, Kans.

New well starting three miles south production Joiner Pool, no dry holes between; 25-for-1 chance next few weeks. E. Croft, Proctor, Texas.

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John L. Dickson, Box 1067, Tulsa, Okla.

ROYALTIES—Okla., Kans., Texas proven gas royalties, offsetting large wells, Hugoton Field, Stevens County, Kansas. Structure maps free. Agents wanted. Harry Haynes, Grantville, Kans.

ROYALTY INVESTORS, DEALERS AND SALESMEN
Absolute dependence can be placed with us on well selected royalties. Our service includes BUSINESS PRODUCING Literature and all necessary details. Address Box E-581, The Oil and Gas Journal, Tulsa, Okla.

WONDERFUL OPPORTUNITY FOR A ROYALTY COMPANY

Will sell Royalty Interests in 100,000-acre spread or more already assembled, aggregating over 500 tracts in EAST TEXAS and other PROMINENT AREAS. Proper terms might be arranged if necessary. For further particulars write

G. T. Blankenship
916 Petroleum Building
Oklahoma City, Oklahoma

AM SPECIALIZING in the sale of gas production and gas royalties in the Texas Panhandle, the largest gas field in the world. Thirty years in business here, and my business is good. Learn the reason. Wire or write E. B. Reeves, Alanreed, Gray County, Texas.

KANSAS FIELDS

(Continued from Page 35)

worth County, where many believe a new oil producing district will be opened.

The discovery of one of the largest gas wells in the southwestern part of the State has increased the interest in the area surrounding the Hugoton gas field and many believe the new gas area will be joined with that of the present producing field which is located 25 miles to the southwest. The Tree Oil Co. and Derby Oil Co.'s No. 1 Warner, C SE, Section 29-30-34w, Haskell County, was gauged at 13,600,000 feet of gas a day from the Colorado shale at 2,640-82 feet.

In Ellsworth County, the Derby Oil Co. and Aladdin Petroleum Co.'s No. 1 Stoltenburg, SE cor. SW NW, Section 22-16-10w, is a new location a half mile from the discovery well of Gypsy Oil Co. and Tom Palmer which is estimated at 2,000 bbls. a day, but which is shut in. Williams & Moore's No. 1 Stratman, C SW SE, Section 23-16-10w, is a new rig, east of the discovery well. An interesting wildcat test in the vicinity is Tom Palmer and others' No. 1 Phelan, SE cor., Section 2-17-10w, which was drilling at 2,000 feet. It is being watched with considerable interest, as it is believed to be located on the Ellsworth Arch.

Cowley County

Smith and others' No. 1 Wallace, SE cor. NW SE, Section 6-33-5, has been abandoned at 660 feet.

Ellis County

Gypsy Oil Co.'s No. 1 Weiland, SE cor., Section 36-12-16w, has been deepened to 3,073 feet and completed for 325 bbls. in sands 3,014-18 feet and 3,051-59 feet.

Greenwood County

York State Oil Co. moved a machine in for No. 2 Rice, SE cor. SW NW, Section 22-23-11. Syndicate Oil Co.'s No. 7 Shook, NE cor. SW, Section 6-24-12, is spudding. Phillips Petroleum Co. and others' No. 8 Beal, NE cor. SE NE, Section 28-23-11, has been completed for 200 bbls. in sand 1,884-1,948 feet.

McPherson County

Shawver and Shell Petroleum Corp. made location for No. 2 Lively, SW cor. NW NW, Section 21-19-1w, Ritz-Garret area. Darby Petroleum Corp.'s No. 1 Fletcher "C," SW cor. SE SW, Section 16-19-1w, has been completed for 28,750,000 feet of gas in chat 2,919-66 feet. Darby Petroleum Corp. and Shell Petroleum Corp.'s No. 3 Kaegi, SE cor. NE, Section 20-19-1w, gauged 24,000,000 feet of gas in chat 2,906-68 feet. Rosenthal and others' No. 1 Knudson, SW cor. SE, Section 23-19-2w, has been deepened from 2,930 feet to 2,964 feet and completed for 50 bbls.

Sedgwick County

Magnolia Petroleum Co.'s No. 6 Wheeler, NE cor. NW SE NE, Section 19-27-2, made 700 bbls. from Simpson sand 3,233-49 feet. Van Martin, Lancaster and Davidson's No. 1 Joe Houtson, SE cor. SW NW, Section 19-27-2, has been abandoned at 1,580 feet.

Stevens County

McKnabb and others' No. 1 Hallock, C SW, Section 36-33-39w, has been completed for 10,000,000 feet of gas in sand 2,620-2,750 feet.

Sumner County

G. W. Long and others' No. 2 Rex, SE cor. NW SE, Section 22-33-3w, is dry and abandoned at 4,548 feet.

CALIFORNIA FIELDS

(Continued from Page 47)

Kettleman Hills and several miles removed from nearest production in the north dome. The Standard considers the outlook so promising in No. 1 Burbank that it recently resumed drilling in its No. 6-29 V, an offset.

Gas Conservation

The chief center of interest in the Kettleman Hills Field of Kings County at present revolves around the interpretation to be placed upon the gas conservation law with respect to this field. At Santa Fe Springs and also at Kettleman Hills, the California Department of Natural Resources has consistently maintained that the California statute definitely prohibits waste resulting from overproduction of natural gas and has proceeded on the theory that operators cannot produce wells having more than a normal reasonable gas-oil ratio even though the operator has an outlet for all natural gas produced. The Standard Oil Co. is contesting this interpretation in the north dome of Kettleman Hills, maintaining that while two of its Elliott zone wells are producing far in excess of the 5 to 1 ratio, it is not wasting any gas as it is delivering all gas to commercial markets in the San Francisco Bay region. Final decision on this phase of the situation is expected to be rendered by Superior Judge Strother early next week, although the matter will probably be subsequently carried up to the State Supreme Court and possibly higher. While commenting on the gas conservation law, it might not be amiss to call attention to the fact that the United States Supreme Court will consider the constitutionality of the California Gas Conservation law on October 12, at which time both the prosecution and defense will present oral arguments on the statute in question. This appeal was made by the Wilshire Oil Co. shortly after the State instituted enforcement of the law at Santa Fe Springs some two years ago. The outcome of this decision will not have any effect so far as Santa Fe Springs is concerned as the critical period has long since passed. The pending decision will be of paramount importance, however, as it will serve as a precedent for similar work of this nature both in California and elsewhere.

LA.-ARK. FIELDS

(Continued from Page 36)

vey, which was junked a few months ago after showing some oil and gas from various depths. The United North & South Production Co. is rigging up its No. 1 Windham, H. English Survey, which is about 800 feet southwest of the Sloane-Tokio test. These operations are located in what is known as the Shelbyville area, about 7 miles southeast of the town of Center.

In northeast Shelby County E. L. Chapman is nearing the bottom of the hole in reaming his No. 1 Pickering Lumber Co., C. E. Henry Survey. The total depth of the hole is 3,888 feet and casing will be set to test the gas which blew wild a few months ago with an estimated initial flow of 25,000,000 feet. There is much speculative opinion as to the formation from which the gas in this well is coming and whether or not, after the hole is cleaned out, the gas will be dry or with a good gasoline content.

What seems to be developing into a deep test in Mississippi is the Arkansas-Louisiana Pipe Line Co.'s No. 1 Brandon Hall farms, Section 61-18-1w. The wildcat is in Adams County and is coring at 4,036 feet. The deep test of the Lion Oil Refining Co. in the Smackover Field of Union County, Arkansas, is coring constantly but with barren results so far. The test is No. 9-A G. P. Hayes, Section 4-16-15. The latest drilling report is coring broken lime with streaks of shale from 5,862-95 feet, and hard lime with thin streaks of sand from 5,895-98 feet. A new wildcat is being rigged up in Sevier County, Arkansas, known as the Tri-State Oil Co.'s No. 1 L. D. McCown in Section 34-8-32. The test is on an 8,000-acre block 2½ miles west of the town of De Queen, and the operators are C. H. Noffsinger, W. T. Marrs and H. H. Tinker of Oklahoma.

OKLAHOMA P. L. REPORT

The Oklahoma Pipe Line Co.'s report for September shows pipe line receipts of 2,074,325.01 bbls., a daily average of 69,144.17 bbls. Its shipments were 2,206,570.48 bbls., a daily average of 73,552.35 bbls. Stocks October 1 were 1,054,255.87 bbls.

PRAIRIE P. L. SHIPMENTS

The Prairie Pipe Line Co.'s crude oil shipments (deliveries to refineries) in September were 3,762,895.11 bbls., a daily average of 125,429.84 bbls.

CLASSIFIED WANTS

ROYALTIES—PRODUCTION

BEDROCK ROYALTY PRICES ahead of drilling on major company blocks. $6 per square mile. Perpetual deeds and title warranty. Clearly stated and understandable interests. See maps and bulletins. R. R. Fisk, Box 1214-B, Wichita Falls, Tex.

WILL PAY CASH for producing Royalties anywhere. Send ful information. Merrick C. Ham, Pres., Lamont & Co., Ltd., 1107-8 Bartlett Bldg., Los Angeles, Calif.

UNUSUAL OPPORTUNITIES FOR ROYALTY INVESTORS AND DISTRIBUTORS.

THE MERCURY COMPANY
Philtower Building, Tulsa, Oklahoma.

Royalty; Leases; Drilling Contract. City Field. Big producing area. O. O. Milliken, Box 63, Oklahoma City.

MID-CONTINENT OIL ROYALTIES
Royalty Sales Company
Suite 523
105 North Clark St.,
Chicago, Ill.

HELP WANTED

WANTED—Young man graduate mechanical engineer with actual drilling experience to learn sales end of business. Star Drilling Machine Co., Chanute, Kans.

DISTRICT SALES MANAGERS
For non-competitive equipment for oil field and industrial plants. Give reference, experience and desired district. Write P. O. Box 721, Houston, Texas.

POSITIONS WANTED

Refiner—Topping and Cracking Specialist. Construction experienced, 17 years best companies, best reference. Address Box E-601, The Oil and Gas Journal, Tulsa, Okla.

SALESMAN with experience selling oilfield and refinery equipment both foreign and domestic oilfields. Box E-570, The Oil and Gas Journal, Tulsa, Okla.

DRILLING AND PRODUCTION
Superintendent, with experience in geological, scouting and land departments desires position as assistant or in charge of operations. Graduate Engineer. Box 2317, Amarillo, Texas.

POSITIONS WANTED

OPERATOR AND PRODUCER
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CITY STATE

Gasoline Market Stronger in Chicago

All Refinery Grades Advance in Price. New Standard Regular Grade Motor Fuel Principal Topic of Discussion

By Robert C. Conine

Chicago Bureau, The Oil and Gas Journal, 6 North Michigan Ave.

CHICAGO, Oct. 12.—Standard Oil Co. of Indiana this week announces the introduction of a new gasoline in the territory. This material is to vary in characteristics with the locality in which it is distributed and the season in which it is sold. The antiknock rating of this gasoline will range from 62 octane number upward in the winter season, when more attention is given to the initial of the material, and from 64 octane number upward in the warmer months.

According to the official statement of the company, the new gasoline will have a "greater proportion of the volatile elements that make for easier starting and quicker warming up and the endpoint of the material will be reduced at least 20 degrees." This lower endpoint, according to officials, is intended to aid complete vaporization in the manifold of the automobile engine and minimizes crank case dilution in cold weather. It is pointed out, however, that it is not the plan of Standard Oil Co. of Indiana to offer gasolines comparable to Ethyl motor fuel in the territory.

The new gasoline is to be called "Standard Red Crown," taking the place of the former name of "Red Crown Gasoline."

It was announced here that the Shell Petroleum Corp. for the present will sell a 64 octane winter gasoline of 62 gravity with no change in initial and endpoints.

There is little doubt that there has been some looseness in the Chicago district in setting up octane number ratings on various gasolines, and it will probably be some time before anything definite can be worked out that will suit the refiners who are being called upon to lessen more and more their use of straightrun product in order to produce a gasoline with an antiknock rating in excess of 65.

Although the production of the new gasoline will entail greater refining costs the price of the material at the service station is to remain the same as that of the regular grade. Although not mentioned in the official bulletin it is understood that the third-grade gasoline, Stanolind Blue, is to be bettered considerably in respects similar to those of the regular grade. As the companies in the district have been seeking the higher gravities for their materials the supply of natural gasoline in the territory is reported greatly diminished. The projected opening of the Oklahoma City Field, however, is expected to disrupt the natural gasoline markets which have been established in the district.

Companies Seeking Higher Octane

Higher octane numbers are being sought for their gasolines by several of the smaller refiners. It is interesting to note that at a time when the marketing end of the oil business appears to be in the worst possible position the refining department is not only holding its own but is forging ahead with several important installations to be recorded each week at almost every refinery in the Chicago district. The real interest which buyers are showing in the matter of antiknock gasolines is forcing, at least in this district, the problem of acquainting the public with the virtues of at least a dozen of "never-knock" gasolines. At some of the trackage stations the motorist will be invited to try the "new octane gasoline."

The raising of the antiknock rating of gasoline at several plants in the territory, apparently, has proved much more difficult than at first anticipated. At one plant the raising of the antiknock rating of the gasoline to 54 octane number marks the limit of profitable operation. If a higher octane number is desired, this refiner says, there will be left on the hands of the refiner a large volume of straightrun gasoline of poor antiknock quality which will be extremely difficult to dispose of. In this connection it may be pointed out that one Mid-Continent refiner is offering the following grades of "octane" gasoline: 25 to 40 octane number, 40 to 54 octane number, and 70 to 80 octane number. In Chicago district the first two ranges are considered unusually low in view of the fact that 54 octane number and below is being taken at the lowest classification for the ordinary U. S. Motor specifications material. Most of the gasoline which has been placed on the open market, even that considered "distress material," has had better than 54 octane number.

Distress Material Cleaned Up

The gasoline tank car markets this week were in a much stronger position than they have been for a good while. A considerable amount of "distress material" has been taken out of the open market by refinery buyers in Chicago district and the reports of curtailed runs to stills in the Mid-Continent are giving a much better tone to the markets. It is feared, of course, that the ascending prices in these markets may tempt certain refiners to step up their runs. This was the case not long ago when U. S. Motor was moving up rapidly to a low of 6 cents, Group 3. There is still some price shading encountered in the district, but the worst situation exists in Detroit where material said to be of 69 octane number and 380 endpoint is being offered at 5.85 cents delivered Detroit.

In oil trade circles here the feeling is strong that the crude oil situation is about to be stabilized removing a great deal of uncertainty which has harrassed buyers all during this year. With their returning strength the gasoline tank car markets are not at all in the precarious position which resulted from the uncertain status of the East Texas fields earlier in the season when prices shot up suddenly to tumble down as quickly under the first indication of mounting gasoline stocks in the district. The marketing business may maintain a more level keel if a proposition which has been seriously agitated takes the form of a law. This is the proposal that no one without storage facilities may consign petroleum products to himself. This would probably minimize the quantity of gasoline which must finally be sold at almost any figure to avoid payment of excessive demurrage charges.

Special Contract Clauses

A written summary which sets out exactly the situation in Chicago district in the matter of unusual marginal guarantees and offers of a quarter of a cent to three-eighths of a cent below the low of a daily publication, and the effects of such concessions to the urge for expansion is to be found in the editorial appearing in The Oil and Gas Journal last week.

Gasoline Tank Car Markets

The gasoline tank car markets in Chicago district were gaining strength steadily Monday and prices had firmed up for the first time in several weeks. Continued improvement in all the grades is expected for the remainder of the month due to the greatly improved condition of the product in the district, and the high test materials are expected to advance somewhat beyond their past relation to the regular gasolines.

The regular gasoline offered at the service stations of most of the major interests, it may now be said, will be a great deal better than the gasolines sold at these pumps before September 15 (in the case of six refiners) and October 15 (in the case of Standard Oil Co. of Indiana). In the case of Standard of Indiana only it is known that the gasoline sold will be adapted to the climatic conditions prevalent at the point of distribution. The majority of refiners, however, are expected to make similar moves without delay. These companies have already raised their antiknock ratings from below 60 octane number to some point above this figure, and several smaller plants will follow the lead of these interests as soon as equipment which they are installing is placed in operation. It is an interesting fact that most of the refinery installations of the past month or two are closely related to cracking processes and are intimately tied up with the general movement to higher octane numbers. The more important refinery additions include stabilizing plants and in one case at least waste gases from vapor phase units and processed to produce a suitable blending material to raise the gravity of the marketed gasoline and lower its initial.

There is still some confusion in respect to the prices ruling in the antiknock gasolines chiefly because of the indefinite division of octane number ranges and because of the fact that some of the marketers offering desirable fuel of this classification do not specify the characteristics of their gasoline in terms of octane numbers.

It is understood, also, that some of the larger interests which are planning to market a gasoline at their regular pumps considerably above their present antiknock ratings are really expecting Ethyl Gasoline Corp. to permit licensees in the United States to use tetraethyl lead in materials other than the regular Ethyl brand gasoline. One important refiner pointed out that such a decision on the part of Ethyl Gasoline Corp. would save millions of dollars for the refiners and would, obviously on a much smaller royalty basis, increase the gallonage profitable to the corporation without interfering with the regular Ethyl which with 74 octane number would continue to hold a position considerably above the second grade Ethyl.

Gasoline Tank Car Prices

Although it is felt in some quarters that the gasoline tank car prices are advancing a little too rapidly and thus tending to rule out the buyers who have adopted the policy of running on a very narrow storage margin, the underlying factors in the present advance are considered much sounder than those which swept the markets upward several weeks ago. Current quotations are considerably above those of last week and it may be said that practically no gasoline is being offered in Chicago district at below 2¾ cents. The tendency is strongly upward in spite of the expected reopening of the Oklahoma City oil wells and further price advances are expected during the week.

The 58-60 gravity, 437 endpoint (U. S. Motor) specifications material of below 54 octane number is offered at 2¾ to 3 cents; this material of 54 to 62 octane number is offered at from a quarter of a cent to half a cent above the ordinary U. S. Motor, and a 62 to 70 octane number gasoline is offered at from three-quarters to 1 cent above the regular U. S. Motor specifications material. In the gasoline above 70 octane number there is not the uniformity in price that would be desired. It may be pointed out that one seller was offering a splendid antiknock material at a cent above the U. S. Motor quotation, although the gravity of the material was closer to that of kerosene than of a gasoline fraction. Some time later this seller discovered that he had a gold mine and when he raised his premium to 3 cents above there was little or no objection on the part of the buyers.

Although most of the gasoline which the leading marketers in the district are improving in respect to antiknock rating has an endpoint of 400 degrees or less, there are no quotations as yet on this material from the tank car standpoint. It is understood, however, that one of the majors is planning to bill customers on the basis of a raised octane number standard. This company, it has been stated semiofficially, will produce no gasoline to be sold under its trade-mark which has an antiknock rating of below 65 octane number. A significant step of this company in the past few weeks has been to recall all contracts for the addition of certain clauses regulating this innovation.

The 60-62 gravity, 400 endpoint gasoline is marked at least half a cent above the U. S. Motor grade material at 3¼ to 3½ cents. This represents a greater advance than that of the U. S. Motor, and this widening of the gap between the U. S. Motor specifications material and the higher tests becomes more evident in still lighter fuels. The 64-66 gravity, 375 endpoint material is offered at 3¾ to 4 cents, and the 68-70 gravity, 360 endpoint gasoline is quoted at 4⅛ to 4¼ cents. The acute scarcity of natural gasoline in the district has discouraged blending of the natural gasoline and 50-52 gravity, 450 endpoint naphtha, and a price, purely nominal, of 2¾ to 3 cents, that of the U. S. Motor specifications material, is quoted on this motor fuel. The naphtha is not available in any large quantities and is quoted above U. S. Motor at 3 to 3⅛ cents.

If the weather which has been highly favorable to motoring holds out a while longer the trade is confident that demand will erase the errors which certain refiners in the Mid-Continent have made and will place these producers in a fair position for the season of slack demand. It is reported that refiners who have been in the position of sellers have in the past week become buyers. This is especially the case with certain refiners who are making heavy demands upon manufacturers of natural gasoline.

Kerosene Markets

The kerosene markets were firmer at the opening of the week and the price on both grades, the 41-43 water white and the 42-44 water white, advanced an eighth of a cent. These were quoted at 2 to 2⅛ cents and 2⅛ to 2⅜ cents, respectively. The prime white material likewise showed an advance being quoted at 1⅝ cents. This product is not offered freely at this time and it is indicated that the refiners and distributors prefer to cut their distillates with the material than to place the kerosene on the market.

Fuel Oils and Gas Oils

Fuel oils and gas oils continue to advance in price and some of the products are reported hard to obtain. The 18-22 gravity fuel oil advanced to from 30 to 35 cents a barrel on desirable material. The 22-26 gravity fuel oil moved up to 32½ to 40 cents a barrel, and the 28-30 gravity zero fuel oil was quoted Monday at 47½ to 52½ cents a barrel. The 32-36 industrial gas oil moved up to 1½ cents, and the zero material was quoted at 1⅝ cent. Straw distillate of 38-40 gravity was quoted at 1¾ cents.

Domestic Market in East Still Steady

Lubricating Oils Show Fractional Advances on Several Grades. Further Weakness Is Manifested in Export Trade

By A. E. Mockler

New York Bureau, The Oil and Gas Journal, Rooms 1919-21, No. 154 Nassau Street

NEW YORK, Oct. 12.—Further weakness in the export market featured the week's developments in the refined products market, with domestic markets in East Coast area remaining in steady position, and lub oils showing further fractional advances on several grades.

While the renewed softness in export gasoline was at the Gulf, the local market naturally reacts to the price movement at the Gulf, and irregularity was evident in the export division of the trade. Apparent overproduction of 64-66 375 endpoint gasoline for the export trade has created a condition where 60-62 400 endpoint, and 61-63 390 endpoint fuels are selling at prices fractionally over the quotation for 64-66, whereas under normal conditions the situation is just the reverse.

Notwithstanding the recent price drops in Gulf quotations, there has been relatively little foreign buying of either gasoline or kerosene in the open market. While large integrated companies with foreign marketing affiliations are still moving products out of the Gulf in fair quantities, open market operators have apparently transferred most of their activity to the Russian and Rumanian markets.

East Coast refiners have slackened their plant operations in line with the seasonal decline in gasoline consumption, refineries in this area running a daily average of 473,300 bbls. of crude to stills daily during the week ended October 3, operating at 74.7 per cent of capacity, as contrasted with daily runs of 499,000 bbls., or at 78.7 per cent of capacity, during the previous week. Notwithstanding this decline, stocks of gasoline held at refineries in this area showed a slight increase during the period, the first gain recorded for a number of weeks. Further reductions in refinery operations are expected during the balance of the year, in line with recommendations of the A.P.I. statistical committee.

Approximately 500,000 bbls. of California gasoline have cleared California ports for the East Coast during the past 10 days, and further heavy shipments are scheduled on contracts recently booked. This heavy influx of Pacific Coast motor fuel, taken in conjunction with the regular shipments to Atlantic Coast ports from the Gulf, will necessitate a close watch on refinery output at seaboard refineries in this territory if the present status quo of the market, from the standpoint of refinery stocks, is to be maintained.

While field news of outstanding importance was lacking during the week, there appears to be a better sentiment prevailing in market circles in the East, and views regarding the outlook for the remainder of the year are more cheerful. Some doubt is still expressed regarding the ability of the trade to hold the refinery gasoline market at prevailing levels, but the continuance of favorable weather is substantially benefiting the gasoline market through holding consumption totals to relatively high levels.

Refinery Gasoline

Tank car movement out of seaboard terminals was holding up to fairly high levels during the past week, and the market remained unchanged at 5¾ to 6¼ cents per gallon in tank car lots, f.o.b. terminals, with the principal sellers quoting a flat 6 cents for U. S. Motor of 65 octane number or better.

There was some increase in movement near the wee-end due to holiday buying, today, Columbus Day, being observed as a legal holiday in some sections of the East. Notwithstanding the lateness of the season, many distributors are still keeping their storage full, exceptionally warm weather in many sections of the territory having made for continued heavy gasoline sales.

While quantities of California gasoline are scheduled to come forward during the next several weeks, this motor fuel has been contracted for by the larger integrated units, and the marketing of these shipments is not expected to disturb the price structure here.

Sales of premium gasolines have been rather backward in some instances during recent weeks, but refiners anticipate a sharp upswing in gallonage on the higher priced fuels once cold weather sets in.

Tank Wagon Gasoline

An advance of 1 cent per gallon in tank wagon and service station prices throughout Pensylvania, with the exception of Philadelphia and Norristown, featured the tank wagon market in the East during the week. The advance was initiated by Atlantic Refining Co., and was followed by other major marketers.

In New York and New England territory marketers are gradually getting the price structure back to posted levels, but this involves merely localized price revisions, and no general change in the price structure has developed.

With weather conditions exceptionally favorable for continued heavy gasoline consumption, dealers are meeting with success in restoring the market to stability prior to the seasonal drop in demand and the outlook for stable tank wagon and service station markets over the remainder of 1931 is much more favorable than it was a few weeks ago.

It is understood that the work of the various sectional code of ethics committees is meeting with considerable success, and notwithstanding the multiplicity of retail stations serving the East Coast gasoline markets, and the incentive to price cutting activities in many cases, it now appears that many of the more destructive marketing tactics which were so in vogue earlier in the season have now been eliminated.

Kerosene

A seasonal upswing in demand has brought about a better feeling in the refinery kerosene market, and the posted price of 5 cents per gallon for 41-43 water white in tank car lots, f.o.b. refinery terminals, is now fairly representative of the market, although sellers are still shading this price by an eighth to a quarter in some instances. Demand has shown considerable increase, distributors stocking in anticipation of cooler weather and resultant greater consumption.

Tank wagon kerosene markets, however, have continued to show a quiet tone, with gallonage rather light for this season of the year, and quotations unchanged throughout the territory.

Fuel Oil

Coincident with the cut in refinery operations at East Coast plants, the first decrease in refinery fuel and gas stocks in many weeks developed during the week ending October 3. While the decline was only 2,000 bbls., bringing total refinery holdings in this area down to 10,819,000 bbls., the reduction was taken as a constructive sign and further reductions are looked for as the heating season progresses.

Bunker fuel oil markets were unchanged throughout the week, the posted price holding at 70 cents per barrel, in bulk, f.o.b. terminals. Contract movement was holding up fairly well. Although refiners do not ordinarily inaugurate their contracting campaign until later on in the year, it is understood that considerable oil business for 1932 has already been closed.

Diesel Oil

Contract movement of Diesel oil was fairly well maintained throughout the week, refiners continuing to quote $1.40 jer barrel, in bulk, f.o.b. refinery terminals. Some interest is being shown in 1932 contracts, and refiners are anxious to find out just how much competition they may look for from Rumania and Russia in marine Diesel sales in European ports during the coming year.

Spot Diesel oil buying has been rather quiet during the week, with large-lot buyers inclined to survey the situation in Gulf and California markets rather thoroughly before coming into the market to place actual business.

Gas Oil

Industrial consumption of gas oil is on the increase, and tank car movement out of refinery terminals showed further increases during the past week.

Refiners continue to quote 28 plus recycled oil at 4 cents per gallon in tank car lots, f.o.b. refinery or terminal, and indications point to a firmer market for this oil as seasonal increases in consumption, coupled with a drop in refinery output, points to a stronger statistical position, from the standpoint of surplus stocks.

Furnace Oil

Distributors of furnace oil are busy in stocking up domestic installations, and demands for oil for this purpose have accounted for a considerable movement during the week.

Leading marketers continue to quote prices for all grades of domestic heating oils at unchanged levels. Contracts for the current season give the buyer protection against any advance beyond current levels, and also the benefit of any lower prices that may develop with a cut in tank wagon furnace oil prices.

Lubs

Further strength was again evident in the cylinder oil market during the week, and prices were advanced fractionally on several grades. Spot 600 steam refined is now held at 22 to 22½ cents per gallon, with 635 steam refined at 23½ to 24 cents per gallon. Bright stocks are also up, at 36 to 37 cents per gallon for light 140-150, and 35 to 36 cents per gallon for the dark. The continued upward movement in cylinder oil prices has tended to ease off demand somewhat, and business reported locally this week was rather quiet.

Industrial oils were moving in routine quantities throughout the week, prices remaining unchanged on both pale and red oils.

Paraffin Wax

Price changes were lacking in this branch of the market during the week, and business was rather sluggish.

Domestic buyers were inquiring for fully refined grades in small lots, and were showing no inclination to contract future requirements in any quantities. Prices remained unchanged on all grades.

Gulf Export Market

The gasoline market was again lower at the Gulf. U. S. Motor was offering at 3½ cents per gallon, with 60-62 400 endpoint, and 61-63 390 endpoint, both at 4¼ cents, and 64-66 375 endpoint at 4 cents per gallon. A mixed cargo of approximately 9,000 tons for October shipment to France was quoted out on the above basis, but closed by another seller at an undisclosed c.i.f. price. Two inquiries for part cargoes of 64-66 and other grades of gasoline were in the market, but up to the time of writing had not been closed.

Venezuelan crude is reported offering for prompt and nearby shipment at prices considerably under recent levels, and some revival in foreign buying interest has developed, although no actual cargo sales were reported closed during the week. Mexican crude was likewise inactive in the open market.

Petroleum Exports

Routine trading continued to characterize the local export market during the past week. New business did not run into large totals, and while there was considerable inquiry reaching sellers, little actual buying was being done, with the possible exception of cylinder oils, where recent price advances have brought about a better feeling on the part of buyers.

The following table shows principal exports of refined petroleum products from the port of New York for the past three weeks (all figures in gallons unless otherwise noted):

	Week ended		
	Oct. 3	Sept. 26	Sept. 19
Gasoline	10,000	217,000	215,000
Naphtha	183,000	125,000	440,000
Kerosene	16,000	60,000	463,000
Fuel oil	385,000	27,000	1,610,000
Lub oil	1,150,000	1,295,000	2,495,000
Pet., refined	410,000	440,000	421,000
	Pounds		
Petrolatum	48,000	80,000	13,000
Paraffin wax	1,170,000	2,300,000	30,000
Refined	100,000	.....	.....
Scale	110,000	650,000	.....
Lub grease	890,000	1,040,000	420,000

Russian competition continues to affect export markets for cased gasoline and kerosene, local sellers report, but the American product is making a favorable showing and is meeting with success in holding its own in most markets.

Imports

Imports of crude and refined petroleum at the principal United States ports for the week ended October 3 totaled 1,215,000 bbls., a daily average of 173,572 bbls., compared with 1,502,000 bbls., a daily average of 214,571 bbls. for the previous week, and a daily average of 197,433 bbls. for the month of September. Details follow:

(Barrels of 42 gallons)

	Bbls.
At Atlantic Coast Ports—	
Baltimore	233,000
New York	632,000
Philadelphia	150,000
Others	35,000
Total	1,050,000
Daily average	150,000
At Gulf Coast Ports—	
Galveston district	65,000
New Orleans and Baton Rouge	43,000
Tampa	57,000
Total	165,000
Daily average	23,572
At All United States Ports—	
Total	1,215,000
Daily average	173,572

Distribution of total imports is as follows:

	Bbls.
Crude	583,000
Gasoline	287,000
Fuel oil	345,000

In addition to the above imports, 10,384 bbls. of gasoline (from Constanza, Rumania), were imported through the port of Detroit during the week ended October 3.

California Oil Receipts

Receipts of California crude and refined petroleum at Atlantic and Gulf

and

discuss

STRONGER WELDS

"Here are those figures from Lincoln's laboratory showing great strength of welds with their new process."

"Pretty convincing, eh?"

 "Perhaps—but I'd rather read about field tests instead of laboratory ones."

"Well then, here's just what you ordered: On a 1,000 mile line of 24-inch pipe, the joints of which were welded by Lincoln's 'Shielded Arc' process using 'Fleetweld' electrodes, the average tensile strength of 715 coupons cut from the welded joints was 73,646 pounds per square inch."

"That's going mighty high."

"Yes, also wide and lively. Wide, since they make broad claims for ductility equivalent to mild rolled steel and resistance to corrosion greater. And lively, since the speed of welding is three to four times greater by this latest development of

LINCOLN

THE LINCOLN ELECTRIC COMPANY, CLEVELAND, OHIO

Largest Manufacturers of Arc Welding Equipment in the World W-186

Coast ports during the week ended October 3 totaled 302,000 bbls., a daily average of 43,143 bbls., compared with 333,000 bbls., a daily average of 47,571 bbls. during the previous week and a daily average of 36,933 bbls. during the month of September. Details follow:

(Barrels of 42 gallons)

At Atlantic Coast Ports—	Bbls.
New York	153,000
Philadelphia	135,000
Others	14,000
Total	302,000
Daily average	43,143
At Gulf Coast Ports—	
All ports	none
At Atlantic and Gulf Coast Ports—	
Total	302,000
Daily average	43,143

Distribution of total California oil receipts is as follows:

	Bbls.
Gasoline	302,000

There was a substantial quickening in California gasoline shipments for Atlantic and Gulf Coast ports during the week, indicating that deliveries on contracts recently booked on the Pacific Coast by eastern marketers are getting under way. Shipments reported, with ownership of tanker moving the oil, where such owner is an oil company, follow:

For New York: 75,000 bbls. of gasoline on the tanker Solana (Tide Water Associated Oil Co.); 82,300 bbls. of gasoline on the Cities Service Ohio (Cities Service Co.); 79,000 bbls. of gasoline on the Thomas H. Wheeler (Standard Oil Co. of New Jersey); 89,000 bbls. of gasoline on the T. J. Williams (Standard Oil Co. of New Jersey); and 71,800 bbls. of gasoline on the New Jersey (The Texas Company).

For Philadelphia: 114,400 bbls. of gasoline on the Eastern Sun (Sun Oil Co.).

For Bayonne: 65,900 bbls. of gasoline and 14,300 bbls. of distillate on the Huguenot (Richfield Oil Co. of California).

For Port Arthur, Tex.: 51,000 bbls. of gasoline on the K. R. Kingsbury (Standard Oil Co. of California).

Charter Market

Little activity was apparent in the tanker charter market during the past week, and fixtures were at a minimum.

Inquiries in the Gulf gasoline market, however, and indications of a reviving interest in Venezuelan crude for shipment to Europe indicated some livening in the transatlantic movement, and charterers were looking for a more active market.

Rates continue at close to record low levels.

Fixtures reported during the week were as follows:

Steamer Belridge (Norwegian) 9,000 tons, dirty, Tampico to Ostermoor, 7/-, October loading.

Motorship Abadan (Swedish) 8,000 tons, clean, Black Sea to two ports Sweden, 8/6, October/November loading.

GULF COAST FIELDS

(Continued from Page 39)

Co. is preparing to resume development on its Sorrento Dome in Ascension Parish, where location has been made for No. 20 United Land Co., 4,040 feet north and 1,760 feet west of the SE cor., Section 15-10s-4e. It is 290 feet north and 400 feet west of No. 19, completed last April in sand at 4,345-51 feet and opening the first flank sand production at Sorrento. Previous production had been in cap rock around 1,600-1,700 feet. Nos. 19 and 20 are on the north flank of the dome.

Standard Oil Co.'s No. 1 Myrtle Grove-Wilburt, Bayou Choctaw Dome, Iberville Parish, Louisiana, has drilled into salt topped at 2,566 feet and at 2,712 feet is to be abandoned, it is reported. This test is only 250 feet west of the same company's No. 1 Gay, which was completed last June as the discovery well of the dome, flowing 3,000 bbls. daily from sand at a total depth of 4,353 feet. That well did not encounter any salt.

ROCKY MOUNTAIN AREA

(Continued from Page 42)

The Continental Oil Co. is trucking in from Fort Collins a gas separator which will be installed at its Briggs well.

Morgan County

The Indian Territory Illuminating Oil Co.'s No. 1 State, C NE NE Section 16-1n-57, Fort Morgan anticline, continues to be the mystery well of northeastern Colorado. An official report says that on October 6 it was drilling at 5,725 feet. No reference was made to the formation. This test cut the Muddy sand at approximately 5,572-5,602 feet, which was reported dry. Allowing a minimum of 100 feet for the break between the Muddy and Dakota, it looks as if a report in circulation in Denver that the hole is 15 feet in the Dakota and that it was found dry might be accepted as reliable in the absence of confirmation. It is most likely the test will be continued until it runs out of hole or has to run casing. It is being drilled with a rotary.

Prairie Oil & Gas Co.'s No. 1 Mortier, C NE NW Section 2-5n-60, southeast of the Greasewood Dome, has 134-foot derrick completed and is setting four boilers, tanks, pumps, etc. A 4-inch 12-mile water line from Jackson Lake has been laid on the surface and is being buried. This location is believed to be on a local high which has been given the name of Jackson Lake Dome.

Colorado Associated Oil Co.'s No. 1 Pumphrey, C SE SE Section 14-4n-58, North Fort Morgan Dome, is drilling at 5,550 feet. There are indications pointing to the thinning of the formations at this location and that the objective will be found considerably higher than first expected. The Hygiene sand indicated this and further confirmation has been found in the cores taken from lower horizons. It probably will be several weeks before the results are known as casing has not yet been run and it is probable a shipment of 8⅝-inch will be made from the mills.

No changes have been reported for several weeks in the status of Independent Oil & Refining Co.'s No. 1 Schmidt, C NE NW Section 19-6n-60; Tulsa-Fort Morgan Oil Co.'s No. 1 Smith, C SE NW Section 18-6n-60, both of these being locations in the Greasewood area, and Badger Creek Oil & Gas Co.'s No. 1 Kent, SW corner Section 2-2n-57, which is standing at 1,165 feet.

Arapahoe County

MacDeb Drilling Co.'s No. 1 Fitzsimmons, NE Section 7-4s-66, near Aurora, succeeded in getting on bottom this week at a total depth of 5,835 feet, but caving started before any new hole could be made and cleaning out is in progress. At this depth, which was reached last June, there was a show of oil in sand, but the hole has not been in a condition to make a test. A string of 4¾-inch was run and had to be pulled and the tools were lost. The latter have been sidetracked, but the casing has not yet been lowered to below 50 feet off bottom.

Jefferson County

Ruby Hill Oil & Gas Co.'s No. 1 Braden, SE cor. Section 24-4s-69, lost its cementing job when the 6⅝-inch was cemented at 3,936 feet, and it will have to be done over again.

Boulder County

Julius Williams' No. 1 Degge, NE SE SE Section 6-1n-71, Boulder Arch, is drilling at 341 feet.

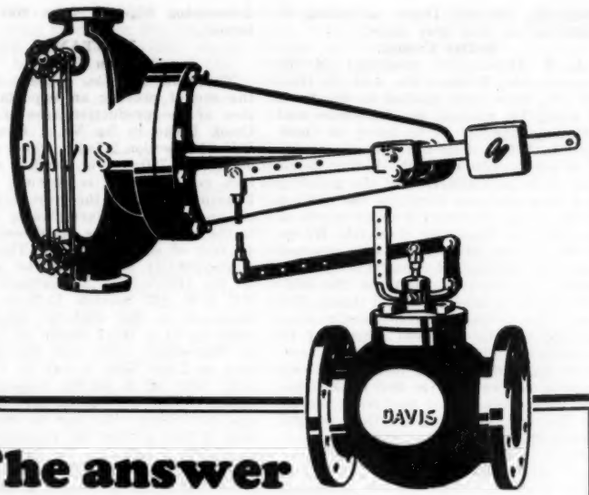
Park County

South Park Oil Co.'s No. 1 Milligan, NE cor. SE Section 13-8s-76, near Jefferson, landed 6⅝-inch at approximately 2,458 feet, 3 feet in hard lime, and went out of that formation at 2,460 feet. Beneath the lime a show of gas and rainbows of oil were reported. The drillers name the horizon as the Dakota.

South Park Oil Co.'s No. 1 Esche, SE cor. NW Section 5-9s-76, is preparing to run the 6¼-inch at a total depth of 2,465 feet.

Rio Blanco County

Magnolia Petroleum Co.'s No. 1 Maddock, C NW SE Section 9-2s-96, Piceance Creek, is bottomed at 1,502 feet and working with the 13⅜-inch to lower for a water shutoff. The California Co.'s No. 1 California-Raven, NW SE Section



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DAVIS VALVE SPECIALTIES

OGJ 10-15 Gray

30-2n-102, Rangely Dome, is drilling at 2,643 feet in hard gray shale.

Moffat County

A. J. Hardendorf, president of the Colorado Gas Utilities Co., and the Ohio Oil Co., have each applied to the town of Craig for natural gas franchises and action is expected to be taken on October 17. While there are several sources of a gas supply available in that territory, it is not unlikely that the granting of a franchise may result in the drilling of the Craig structure 3 miles south of the town in Township 6 North, Range 91 West. Mr. Hardendorf has obtained from the Midwest Refining Co. the gas rights on a block on the dome, the Midwest retaining most of the oil rights. The Ohio Oil Co. also has considerable acreage and recently acquired a tract of 18 acres on top of the structure which heretofore has held back a test. The Craig Dome is not far from the Bell Rock structure which was drilled two years ago by the Midwest and a large flow of gas opened up.

NEW MEXICO

Lea County

Due to the fact that there is no change in pipe line nominations or pipe line connections in the Hobbs Pool, Umpire C. G. Staley has informed the operators that the proration schedule used for the period September 1 to September 15, inclusive, would be in effect for the first half of October. This provided for a daily outlet of 36,968 bbls. from the field. Pipe line runs from the field in September amounted to 1,087,389 bbls., bringing total runs since the field went under proration on July 10, 1930, up to 15,061,180 bbls.

Another location was made in the Hobbs Pool this week in the Midwest Refining Co.'s No. 26 State, 880 feet from the east line and 880 feet from the south line of Section 33-18-38, for which cellar is being dug. It offsets the Midwest's No. 29 Turner on the west and the Gypsy Oil Co.'s No. 1 East Grimes on the south.

Gypsy Oil Co.'s No. 1 East Grimes, SW NE SE Section 33-18-38, is drilling at 2,325 feet in salt. It topped the anhydrite at 1,560 feet and the salt at 1,690 feet.

Continental Oil Co.'s No. 4-B State, NE NW SE Section 33-18-38, cemented the 15½-inch at 232 feet and is rigging up rotary.

Midwest Refining Co.'s No. 8 Byers, SE NW NW Section 3-19-38, is digging cellar and pit.

Pacific Coast Oil Co.'s No. 1 Blakey, C SW NW Section 28-19-38, is digging cellar.

Culberson & Conrad's No. 1 State, C NE Section 22-18-34, Caprock area, is drilling at 4,700 feet in lime and has a slight show of gas at this depth.

Santa Fe County

The New Mexico Securities Co.'s No. 1 State, NE cor. SW Section 6-10n-7e, 24 miles east of Albuquerque, is spudding in a test which is reported to be exploring for carbon dioxide gas. The only other operation in this county is the Myers-Owsley Drilling Co.'s No. 1 Cantwell, NW cor. Section 5-10n-9e, drilling below 266 feet.

De Baca County

The Landowners Oil Co.'s No. 1 McAdoo, SW cor. NE Section 16-1s-27, Buffalo Creek, is drilling out cement 35 feet off bottom after cementing a cave with 25 sacks at a total depth of 4,575 feet.

Guadalupe County

New Mexico Producing & Refining Co., Ltd.'s No. 1 McMillan, SW cor. Section 24-5n-16, Mesa Leon district, is drilling at 2,405 feet in red shale.

Bernalillo County

Norins Realty Co., Inc.'s No. 1 Pajarito grant, NW cor. NE Section 22-9n-1e, is drilling at 725 feet in river wash and carrying the 15½-inch at 710 feet.

Torrance County

Estancia Valley Carbon Dioxide Development Co.'s No. 2 De Hart, C SE SE Section 12-7n-7e, is reported shut down at 435 feet to finance.

San Juan County

J. F. Cross and others' No. 4, C SE NE Section 20-29-11, Bloomfield district, was unable to recover lost bit and abandoned the hole at 180 feet. R. C. Oswell's No. 2, NW NW Section 34-30-11w, near Aztec, is bottomed at 910 feet and underreaming 8¼-inch from 800 feet to bottom.

MONTANA

Carbon County

The Ohio Oil Co. appears to be on the eve of proving an important extension of the productive area of the Dry Creek Dome in its No. 1 Chapman, C SW SW Section 2-7s-21, which at a total depth of 4,780 feet is standing with 8⅝-inch cemented. It is through the first Frontier in which the core showed both oil and gas. An unconfirmed report is to the effect that the bit passed through 48 feet of saturated sand. This well is approximately a mile to the northwest of the Ohio's No. 2 Northern Pacific, NE NW SE Section 11-7s-21, the oil discovery in the Dakota sands which came in at a total depth of 5,510 feet in September, 1930, and flowed at the rate of 2,300 bbls. a day in a 16-hour test. The oil is of an unusually high grade, testing 52 degrees gravity. Previous to drilling this test to the Lakota sand it had proven the Frontier for gas in its No. 1 Northern Pacific. Its No. 1 Chapman, a mile to the northwest, which gives indications of being a producer, was drilled in a fault block and found the Frontier several hundred feet deeper than in the discovery. The Ohio company recently completed two wells in the field, but neither of these was large producers. it has cellars completed for two other wells in its No. 2 Montana Industrial, C. NW NE Section 11-7-21, and No. 2 Souders, C NE SW Section 2-7-21. No. 1 Chapman is half a mile to the west of No. 1 Souders, which was completed as a gas well in the Frontier at 4,409 feet.

A mile to the east of the discovery well, Carbon Oil & Gas Co.'s No. 1 Armstrong, SW cor. NW Section 7-7s-22, is drilling at 4,942 feet in a hard rock formation. Cores in the Frontier showed considerable gas.

Glacier County

L. B. O'Neil, agent for the Montana Power Co., is completing a gas well in his No. 1 State, C NE Section 9-35-5w, Cut Bank Field, which will extend the proven area a mile southwest of the nearest producer. At a total depth of 2,860 feet it gauged 10,000,000 feet in 24 hours, but is being drilled deeper. The status of the other O'Neil drilling wells is as follows: No. 1 Teterug, CSL SW Section 26-36-5w, is drilling at 2,700 feet. No. 1 Whetstone, C SE NW Section 10-35-5w, is drilling at 2,300 feet. No. 1 Cummings, C SW Section 22-36-5, is drilling at 1,500 feet. No. 1 McNeil, C NE Section 23-35-5, is spudding at 250 feet, and No. 1 Vermont Loan & Trust Co., center Section 28-36-5, has rig up. His No. 1 Peterson, center Section 21-35-5w, is drilling at 2,635 feet.

Browning Development Co.'s No. 1 Reickhoff, SE cor. NE Section 3-34-6w, Cut Bank district, is rigged and ready to spud. R. C. Tarrant's No. 1 Hogland, NW cor. SW Section 13-34-6w, is drilling below 250 feet.

Fulton Petroleum Co.'s No. 1 Blackfoot, SW NE NE, Section 28-36-12w, Milk River district, is drilling at 2,647 feet.

Liberty County

G. G. Howard's No. 2 Schoonover, C SE NE Section 13-36-5e, Bear's Den, is drilling below 600 feet, and People's Oil & Gas Co.'s No. 1 First National Bank, C SE NW Section 17-36-6e, is bottomed at 1,285 feet and fishing for pipe.

The California Co.'s No. 1 Eleanor, SE SE Section 11-33-6e, Utopia district, is standing with the 6¼-inch cemented at 3,244 feet to shut off water.

Teton County

The California Co.'s No. 1 Sullivan, NW NE NW Section 34-27-7w, Bynum district, is drilling at 2,120 feet in gray sandy shale and shells.

Toole County

Oregon Oil Syndicate's No. 1 Barthelote, SW NE SE Section 20-36-2e, Barthlote district, is drilling at 1,300 feet.

UTAH

Utah Southern Oil Co.'s No. 1 Balsey, C NE NE Section 31-23-21, Salt Valley Dome, in Grand County, is drilling at 3,835 feet in anhydrite and shale after casing off 2,000 feet of oil at 3,452 feet.

Diamond Oil Co.'s No. 1, SE NW Section 16-8s-5e, Utah County, is bottomed at 3,410 feet and waiting for casing to shut off water before drilling. Officials of the company state that at this depth it has oil and gas. The hole is bottomed in the Pennsylvanian formation.

Escalante Explorations, Inc.'s No. 2 Escalante, Section 19-43-15, Bloomington Dome, Washington County, is coredrilling at 2,358 feet, and the Arrowhead Petroleum Corp.'s No. 1, SE SW NE Section 1-43-15, Punchbowl Dome, is resuming at 1,400 feet in the Kaibab formation, with some shall shows.

WYOMING

Natrona County

Midwest Refining Co.'s No. 11 Middy, C NE NE Section 23-35-79, Midway Dome, which has for several months been trying to make a test of the Muddy sand at 5,967-83 feet after plugging back from a total depth of 6,685 feet, appears to be on the eve of being successful. It has been an unusually difficult job and all kinds of trouble delayed the operation. Two months ago it was turned back to the drilling contractors to complete with rotary. The hole was redrilled to the Dakota and then cemented back to the pipe above the Muddy. It then again was drilled out to within 3 feet of the bottom of the Muddy. This has been done several times, one time the gas breaking in and blowing the tools up the hole. This week the cement again was drilled out to 5,980 feet and bailing down to test the water shutoff started. When bailed down to 2,500 feet, the oil came in and the fluid could not be lowered below that horizon. Preparations are being made to swab the well and test the water shutoff. It made about 135 bbls. of oil per day through the water when bailing was in progress.

Western Producers, Inc.'s No. 1, SW Section 5-39-78, on the east side of Salt Creek, was drilled to 1,600 feet and missed the shale pay. It is being abandoned.

Summitt Oil Co.'s No. 1 Trewitt, NW cor. Section 21-33-80, North Platte, is bottomed at 1,400 feet and is underreaming the 8¼-inch to shut off water.

Weston County

Riggs Oil Co.'s No. 1 Fowler, SE cor. NE Section 16-46-64, Osage Field, a mile to the west of the nearest producer and which marks an important extension of that pool, was drilled 6 feet into the Muddy sand, topped at 3,188 feet, and was reported flowing 130 bbls. natural. It has been allowed to stand while the Illinois Pipe Line Co. made a connection and tankage was erected. It will not be deepened, shot or swabbed until after marketing arrangements for the oil have been concluded. The owners anticipate a much larger production than that so far shown and estimates are put at 300 to 500 bbls. daily. The oil tests 41.3 gravity A.P.I. scale. The depth to the sand showed a dip in a mile of more than 1,100 feet and it is believed that another productive terrace has been found.

Carl Cundy's No. 2, NW NE NE Section 31-46-64, found the sand at 1,396-1,402 feet, but it was of a poor quality and was dry.

Central Oil Co.'s No. 1, NW cor. Section 26-46-64, was dry to 2,320 feet and may be completed as a water well to supply development west of Beaver Creek.

Tom Don's No. 3, NW SW SE Section 23-46-64, found the sand at 1,780-94 feet and will pump 50 bbls. per day.

Egaso Operating Co.'s No. 15, SE cor. NE Section 17-46-63, in the shallow district on the eastern side of the field, is drilling at 200 feet. Federal Oil Co.'s No. 1, SW SE SE Section 15-46-64, is drilling at 1,225 feet, and Sandell, and others' No. 1, SE SW SE Section 12-46-64, cemented 8¼-inch at 400 feet and is waiting.

Julius Peters and others' No. 1 Witzell, SE cor. NW Section 30-46-64, Fiddler Creek, is drilling at 2,025 feet, and Gose Oil Syndicate's No. 1, NE cor. Section 28-47-63, Soda Creek, after drilling out cement at 4,920 feet, is making new hole.

Niobrara County

Indian Petroleum Co.'s No. 1, NE NW NE Section 7-35-65, Lance Creek, is bottomed at 4,175 feet and underreaming the 4¾-inch at 4,140 feet.

Washakie County

Ohio Oil Co.'s No. 1 Strothers, SW SE NW Section 19-45-92, Neiber Dome, is drilling at 7,770 feet in broken shale and probably is near the top of the Dakota. Shows of gas in the first and second Frontier and a little water in the second sand, were reported.

Park County

Midwest Refining Co.'s No. 24 Rosenberg, NE SE NE Section 26-58-98, Frannie Dome, is bottomed at 2,926 feet and running 8⅝-inch. It is probably on top of the Embar.

Carbon County

Producers & Refiners Corp.'s No. 4 Wertz Dome, SW cor. SE Section 7-26-89, is bottomed at 3,398 feet and swaging casing at 3,371 feet. Midwest Refining Co.'s No. 27 Union Pacific, NW SE SE Section 11-20-81, Elk Mountain, is drilling at 3,920 feet.

Fremont County

Ward Oil & Gas Co.'s No. 1, NE cor. Section 28-34-90, Dutton Basin, is drilling at 2,500 feet. It had shows of oil and gas in the second Frontier, but not in commercial quantities. It is headed for the Dakota.

Kinney-Coastal Oil Co.'s No. 1 Chatterton-Weeks, C SW NE Section 22-3n-1w, Pilot Butte, is shut down at 3,631 feet waiting for pipe to test the Muddy sand, which was topped at 3,566 feet. The core showed some oil and considerable gas in 12 feet of saturated sand. Kuhn Brothers, who had the rotary contract, have completed same and turned the hole back to the operator to finish.

Sweetwater County

Vermillion Oil Co.'s No. 1 State, SW cor. Section 16-12-99, Hiawatha Dome, is bottomed at 4,685 feet and underreaming 6⅝-inch to bottom.

Pipe Line Runs

Average daily pipe line runs for the week ending October 10:

WYOMING	
Salt Creek	23,110
Big Muddy	1,760
Byron	.....
Dallas-Derby	310
Dutton Creek	.....
Elk Basin	610
Ferris	20
Frannie	266
Grass Creek	2,010
Greybull	.....
Hamilton Dome	950
Hudson	270
LaBarge	690
Lance Creek	290
Lost Soldier	2,810
Lovell	.....
Oregon Basin	1,230
Osage	1,130
Pilot Butte	40
Rock River	1,830
Poison Spider	220
Simpson Ridge	50
South Casper	.....
Teapot	10
Warm Springs	.....
Total Wyoming	37,650
MONTANA	
Buckley-Border	540
Cat Creek	910
Dry Creek	310
Kevin Sunburst	4,320
Lake Basin	70
Pondera	1,430
Total Montana	7,580
COLORADO	
Florence	320
Fort Collins	940
Iles	1,000
Moffat	860
Orchard	1,050
Rangely	20
Tow Creek	330
Walden	.....
Total Colorado	4,540
NEW MEXICO	
Rattlesnake	700
Hogback	510
Table Mesa	75
Artesia	500
Cap Rock	500
Getty	.....
Hobbs	36,960
Jal	1,115
Lea City	1,800
Eunice	485
Total New Mexico	42,657
Total Rocky Mountain area	92,427
Total previous week	90,984
Difference	1,443

BUILD BOOSTER STATION

CHATHAM, Ontario, Oct. 10.—Southern Ontario Gas Co. is building a small compressor plant near Lot 194, Talbot Road, Romney Township, Ontario. The plant will handle the gas for Kingsville and Leamington.

NEW OIL FIELD AT SAN MIGUELITO, CALIF.

(Continued from Page 17)

at the surface to 5 to 10 degrees at 3,000 feet and is normal in all respects. The north limb, however, is somewhat steeper at depth and has been compressed and broken by a series of small thrust faults having a hade of about 30 degrees.

Topography of Field

The topography of the San Miguelto area is quite similar to that existing in the Ventura Avenue Field and in the eastern end of the Rincon Field. Elevations range from 100 feet above sea level to approximately 1,500 feet and the surface contour is quite rough and hilly. No. 1 Grubb of the Continental is approximately 1 mile east and a little south of the Chanslor-Canfield Midway Oil Co.'s No. 2-A Hobson but required the construction of nearly 3 miles of road to connect the two projects. This intervening mile between the two wells would ordinarily be of minor importance in a major field where one of the wells is on the apex of the structure, but in this instance it is of considerable importance as No. 2-A Hobson is believed to be west of a recognized fault while No. 1 Grubb of the Continental is east. Data available at the present time indicates a downward displacement west of the fault, with the result that No. 1 Grubb is correlating substantially higher structurally. Credit for the discovery of the San Miguelito Field goes to M. B. Barnes, chief geologist of the Continental Oil Co. of California, and Ward Blodget, chief geologist of the Chanslor-Canfield Midway Oil Co.

Interest in the possibilities of the San Miguelito area is a secondary reaction resulting from the discovery of the Rincon Field on the extreme western end of the Ventura anticline. Upon becoming interested in the Rincon area, the Chanslor-Canfield Midway Oil Co. acquired most of what it believed to be the total potential productive acreage. This included Hobson Lease A and Hobson Lease B. Subsequent developments revealed the Rincon Field to be farther west than anticipated with the result that Hobson Lease A was outside the productive limits in the eastern end of the field. The Continental in the meantime had acquired a lease to the San Miguelito ranch and subsequently undertook a complete minute geological survey. This work, extending over more than a year, indicated the probable existence of a new separate field and this was subsequently confirmed by deep exploration work by the Chanslor-Canfield Midway Oil Co. in No. 2-A Hobson. Acreage in the San Miguelito area is all held in large blocks and future development will therefore be along normal lines and in accordance with fundamental principles of oil field development. Future production curves will consequently be relatively free from violent fluctuations with the result that production of this field should not exert any unfavorable effect on state production or jeopardize existing curtailment work.

EAST CENTRAL TEXAS

(Continued from Page 25)

impossible under such an area as Gregg and Rusk Counties where there are innumerable operators, where sand conditions are exceedingly different, and where hasty drilling has prevented the study of engineering problems, and the production of the wells.

COMPLETIONS IN EAST CENTRAL TEXAS

Gregg County

Atlantic Oil & Production Co.'s No. 1 Burnside, top sand 3,530 feet, initial production 220 bbls. per hour through tubing, total depth 3,551 feet. Same company's No. 2 Dumas, top sand 3,616 feet, initial production 150 bbls. per hour through eleven-sixteenths inch tubing choke, total depth 3,666 feet. Same company's No. 1-A J. Tuttle, top sand 3,534 feet, initial production estimated 135 bbls. per hour through eleven-sixteenths inch tubing choke. Barnsdall Oil Co.'s No. 2 George Adams, top sand 3,590 feet, through seven-eighths inch tubing choke, total depth 3,606 feet. Ambrose and others' No. 2 D. L. Magrill, top sand 3,656 feet, initial production 85 bbls. per hour through eleven-sixteenths inch tubing choke, total depth 3,692 feet.

Cranfill & Reynolds' No. 1 Anderson, top sand 3,470 feet, initial production 220 bbls. per hour through open tubing, total depth 3,510 feet. Fain & McGaha's No. 3 Clements, top sand 3,571 feet, initial production 110 bbls. per hour through eleven-sixteenths inch tubing choke, total depth 3,620 feet. Greenwood and Josey's No. 1 John Spurrier, top sand 3,561 feet, initial production 211 bbls. per hour through open tubing, total depth 3,007 feet.

Humble Oil & Refining Co.'s No. 7 Edwards, top sand 3,578 feet, initial production 85 bbls. per hour through three-fourths inch tubing choke, total depth 3,645 feet. Same company's No. 6 Holland, top sand 3,572 feet, initial production 105 bbls. per hour through three-fourths inch tubing, total depth 3,598 feet. Same company's No. 5 W. R. Hughes, top sand 3,655 feet, initial production 80 bbls. per hour through three-fourths inch tubing choke, total depth 3,690 feet. Same company's No. 2 H. M. Lawrence, top sand 3,610 feet, initial production 61 bbls. per hour through three-fourths inch tubing choke, total depth 3,652 feet. Same company's No. 3 Lawrence, top sand 3,599 feet, initial production 60 bbls. per hour through three-fourths inch tubing choke, total depth 3,639 feet.

Charles Loce's No. 1 Doby, derrick abandoned. Magnolia Petroleum Co.'s No. 6 Everett, top sand 3,678 feet, initial production 160 bbls. per hour through one-eighth inch tubing choke, total depth 3,682 feet. Same company's No. 2 Walker, top sand 3,646 feet, initial production 105 bbls. per hour through 1-inch tubing choke, total depth 3,660 feet. Margay Oil Co.'s No. 1 T. Christian, top sand 3,650 feet, initial production 204 bbls. per hour through open tubing, total depth 3,682 feet. Same company's No. 3 Corbin, top sand 3,554 feet, initial production 125 bbls. per hour through 1-inch tubing choke, total depth 3,575 feet.

Canadian Oil & Production Co.'s No. 1 J. A. Whittaker (formerly McElvain and Beckett), top sand 3,505 feet, initial production 210 bbls. per hour through open tubing, total depth 3,540 feet. Macmillan Petroleum Co.'s No. 2 J. R. Fenton, top sand 3,582 feet, initial production 85 bbls. per hour through three-fourths inch tubing choke, total depth 3,604 feet. O'Brian Brothers and others' No. 2 M. Haney, top sand 3,515 feet, initial production 110 bbls. per hour through eleven-sixteenths inch tubing choke, total depth 3,548 feet.

Pilot Oil Co.'s No. 2 Fishburn, top sand 3,493 feet, initial production estimated 40 bbls. per hour through twenty-sixty-fourths-inch choke, total depth 3,519 feet. Pruitt's No. 1 A. H. Phillips, top sand 3,674 feet, initial production 120 bbls. per hour through open tubing, total depth 3,678 feet. Republic Production Co.'s No. 4 Fisher, top sand 3,450 feet, initial production 110 bbls. per hour through tubing, total depth 3,464 feet.

Roeser and Pendleton's No. 2-A Satterwhite, top sand 3,669 feet, initial production 189 bbls. per hour through open tubing, total depth 3,690 feet. Seigler and McCall's No. 2 Young, top sand 3,515 feet, initial production 225 bbls. per hour through open tubing, total depth 3,589 feet. Lewis Sikes' No. 1 Stencil, top sand 3,683 feet, initial production 105 bbls. per hour through 1-inch tubing choke, total depth 3,718 feet.

Stanolind and Simms Oil Co.'s No. 1 McGeorge, top sand 3,442 feet, initial production 115 bbls. in 30 minutes through open tubing, total depth 3,530 feet. Stanolind and Simms Oil Co.'s No. 6 Persons, top sand 3,503 feet, initial production 88 bbls. in 30 minutes through tubing, total depth 3,556 feet. Christie Stansborg and others' No. 1 J. R. Doby, top sand 3,513 feet, initial production 125 bbls. per hour through three-quarters-inch tubing choke, total depth 3,557 feet.

Sun Oil Co.'s No. 1-A Tooke, top sand 3,590 feet, initial production 85 bbls. per hour through eleven-sixteenths-inch tubing choke, total depth 3,621 feet. Superior Oil Co.'s No. 1-B Prichard, top sand 3,502 feet, initial production 225 bbls. per hour through open tubing, total depth 3,550 feet. The Texas Company's No. 3 Woods, top sand 3,558 feet, initial production 145 bbls. per hour through 1-inch tubing, total depth 3,600 feet. Tidal Oil Co.'s No. 2-B Nettleton fee, top sand 3,500 feet, initial production 68 bbls. in 10 hours through tubing and casing, total depth 3,518 feet. Vacuum Oil Co.'s No. 2 White, top sand 3,521 feet, initial production 226 bbls. per hour through open tubing, total depth 3,552 feet.

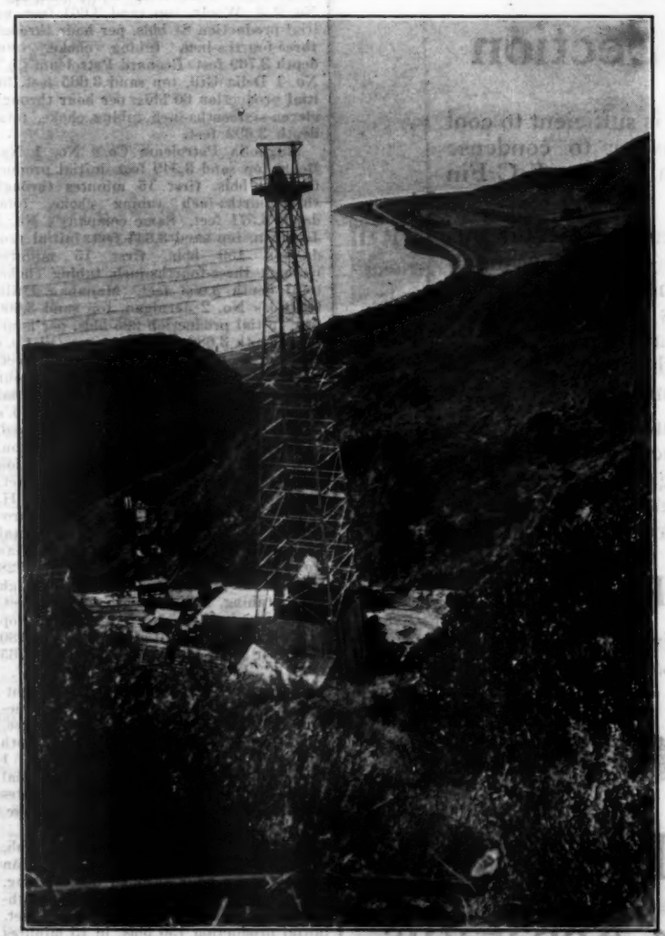
Yount Lee Oil Co.'s No. 3-A Deason, top sand 3,646 feet, initial production 150 bbls. per hour through eleven-sixteenths-inch tubing choke, total depth 3,660 feet. Same company's No. 3-A G. E. Fenton, top sand 3,618 feet, initial production 80 bbls. per hour through eleven-sixteenths-inch tubing choke, total depth 3,638 feet. Same company's No. 1 Floyd Jones, top sand 3,568 feet, initial production 100 bbls. per hour through eleven-sixteenths-inch tubing choke, total depth 3,588 feet. Same company's No. 1-B Smith, top sand 3,531 feet, initial production 81 bbls. per hour through eleven-sixteenths-inch tubing choke, total depth 3,557 feet. Same company's No. 1 Tuttle, top sand 3,586 feet, initial production 104 bbls. per hour through eleven-sixteenths-inch tubing choke, total depth 3,606 feet. Charles Davidson's No. 1 Paul Jones, top sand 3,682 feet, initial production 185 bbls. in four hours through one-half-inch tubing choke, total depth 3,687 feet.

Gulf Production Co.'s No. 1 Clayton heirs, top sand 3,518 feet, initial production 112 bbls. per hour through three-quarters-inch tubing choke, total depth 3,532 feet. Same company's No. 2 Goyne, top sand 3,623 feet, initial production 124 bbls. per hour through three-quarters-inch tubing choke, total depth 3,633 feet. Same company's No. 2 Hilton Estate, top sand 3,539 feet, initial production 142 bbls. per hour through three-quarters-inch tubing choke, total depth 3,554 feet. Same company's No. 9 Spear, top sand 3,540 feet, initial production 139 bbls. per hour through three-quarters-inch tubing choke, total depth 3,550 feet.

Humble Oil & Refining Co.'s No. 8 Knowles, top sand 3,558 feet, initial production 90 bbls. per hour through three-quarters-inch tubing choke, total depth 3,620 feet. Ruston Drilling Co.'s No. 1 W. A. Jones, top sand 3,541 feet, initial production 150 bbls. per hour through open tubing, total depth 3,564 feet. Magnolia Petroleum Co.'s No. 1 Andrews, location abandoned. Same company's No. 2 Goyne, location abandoned.

O'Brien and others' No. 1 Spear, top sand 3,552 feet, initial production 100 bbls. per hour through 1-inch tubing choke, total depth 3,567 feet. Oliphant and others' No. 2 Godfrey, top sand 3,551 feet, initial production 105 bbls. in 30 minutes open through tubing, total depth 3,579 feet. Oliphant's No. 3 D. M. Peterson, top sand 3,592 feet, initial production 115 bbls. in 30 minutes through 1-inch tubing choke, total depth 3,612 feet. Oriental Oil Co.'s No. 2 F. Johnson, derrick abandoned. Glasscock Brothers' No. 2 Jones, top sand 3,567 feet, initial production 125 bbls. in four hours through one-half-inch tubing choke, total depth 3,665 feet. Everett and others' No. 1 J. H. Laird, top sand 3,536 feet, initial production 105 bbls. per hour pinched, total depth 3,590 feet.

Sinclair Oil & Gas Co.'s No. 12 Cole, top sand 3,660 feet, initial production 184 bbls. in 10 hours, total depth 3,663 feet. Sun Oil Co.'s No. 9 Hilburn, top sand 3,679 feet, initial production 87 bbls. per hour through three-quarters-inch tubing choke, total depth 3,684 feet. Sun Oil Co.'s No. 2 Smith, top sand 3,645 feet, initial production 112 bbls. per hour through three-quarters-inch tubing choke, total depth 3,650 feet. The Texas Company's No. 4 Elder, top sand 3,667 feet,



Continental Oil Co.'s discovery well, No. 1 Grubb, between Rincon and Ventura Avenue Fields.

Cooling or Condensing with Air

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A GENTLE breeze is sufficient to cool high pressure gas or to condense steam or gasoline with the new K-C Fin Bentube Section.

The finned surface of each element in this unique design has 6½ times as much transfer surface as the same length of bare tube. The unit is therefore exceedingly compact as well as highly effective. It is sturdily built and readily installed, with simple piping connections.

Wherever cooling water is scarce, the K-C Fin Bentube Section will permit cooling or condensing operations with economy and freedom from operating troubles and maintenance expense.

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285 Madison Ave., New York

Branches in all oil centers.

Griscom-Russell

Heat Transfer Apparatus

initial production 187 bbls. per hour through 1-inch tubing choke, total depth 3,692 feet.

Tidal Oil Co.'s No. 1 T. Bell, top sand 3,675 feet, initial production 150 bbls. per hour through open tubing, total depth 3,675 feet. Wycliff and others' No. 1 Smith, top sand 3,554 feet, initial production 125 bbls. per hour through three-fourths-inch tubing choke, total depth 3,575 feet.

Nacogdoches County

Sequoia Oil Co.'s No. 1 Douglas, dry and abandoned, total depth 4,587 feet.

Rusk County

Cameron Oil Co.'s No. 1 Sam P. Warren, top sand 3,755 feet, initial production 75 bbls. per hour through three-fourths-inch tubing choke, total depth 3,611 feet. Gulf Production Co.'s No. 2 Terell, top sand 3,622 feet, initial production 80 bbls. per hour through open tubing, total depth 3,630 feet.

Humble Oil & Refining Co.'s No. 48 L. C. Crim, top sand 3,579 feet, initial production 101 bbls. per hour through three-fourths-inch tubing choke, total depth 3,604 feet. Same company's No. 49 Crim, top sand 3,577 feet, initial production 127 bbls. per hour through three-fourths-inch tubing choke, total depth 3,633 feet. Same company's No. 49 Crim top sand 3,577 feet, initial production 127 bbls. per hour through three-fourths-inch tubing choke, total depth 3,633 feet. Same company's No. 3-A B. F. Laird, top sand 3,603 feet, initial production 101 bbls. per hour, total depth 3,624 feet. Same company's No. 3 Minor, top sand 3,709 feet, initial production 103 bbls. per hour through three-fourths-inch tubing choke, total depth 3,714 feet. Same company's No. 11 Peterson, top sand 3,585 feet, initial production 111 bbls. per hour through three-fourths-inch tubing choke, total depth 3,607 feet. Same company's No. 12 Peterson, top sand 3,612 feet, initial production 202 bbls. first two hours through three-fourths-inch tubing choke, total depth 3,629 feet. Same company's No. 2 J. Wooly, top sand 3,661 feet, initial production 81 bbls. per hour through three-fourths-inch tubing choke, total depth 3,769 feet. Leonard Petroleum Co.'s No. 1 Delia Gill, top sand 3,665 feet, initial production 60 bbls. per hour through eleven-sixteenths-inch tubing choke, total depth 3,692 feet.

Magnolia Petroleum Co.'s No. 1 Nat Bean, top sand 3,549 feet, initial production 90 bbls. first 15 minutes through three-fourths-inch tubing choke, total depth 3,571 feet. Same company's No. 1 Jernigan, top sand 3,644 feet, initial production 159 bbls. first 15 minutes through three-fourths-inch tubing choke, total depth 3,653 feet. Manahan Drilling Co.'s No. 2 Jernigan, top sand 3,666 feet, initial production 225 bbls. per hour, total depth 3,686 feet. Navarro Oil Co.'s No. 3 J. N. Peterson, top sand 3,618 feet, initial production 125 bbls. per hour through 1¼-inch tubing choke, total depth 3,624 feet. Peter Bough Oil Co.'s No. 2 J. N. Peterson, derrick abandoned. Pilkin & Goldstein's No. 1 V. Barton, top sand 3,709 feet, initial production 120 bbls. per hour, total depth 3,760 feet.

Snowden & McSweeney's No. 6 R. H. Laird, top sand 3,571 feet, initial production 85 bbls. in 30 minutes, total depth 3,689 feet. Stanolind Oil & Gas Co.'s No. 2 W. H. Smith, top sand 3,728 feet, initial production 179 bbls. through open tubing, total depth 3,730 feet. Stroube and others' No. 1 V. Barton, top sand 3,710 feet, initial production 180 bbls. per hour open, total depth 3,765 feet.

Westheimer & Stroube's No. 2 Brightwell, top sand 3,590 feet, initial production 95 bbls. first hour through three-fourths-inch tubing choke, total depth 3,650 feet. Texas State Oil Co.'s No. 1 Dan Kelly, top sand 3,692 feet, initial production 52 bbls. in 30 minutes through three-fourths-inch tubing choke, total depth 3,660 feet.

Golding & Murchinson's No. 2 Thrash, top sand 3,724 feet, initial production 156 bbls. per hour through open tubing, total depth 3,753 feet. Gordon and others' No. 1 Thompson, top sand 3,730 feet, initial production 150 bbls. in 15 minutes through open casing, total depth 3,770 feet. Goude & Murray's No. 1 Mrs. Minnie Priddy, top sand 3,817 feet, initial production 105 bbls. in six hours through three-fourths-inch tubing choke.

Humble Oil & Refining Co.'s No. 1 J. D. Florey, top sand 3,733 feet, initial production 135 bbls. per hour through three-fourths-inch tubing choke, total depth 3,774 feet. Same company's No. 3 James Fuller, top sand 3,685 feet, initial production 127 bbls. per hour through eleven-sixteenths-inch tubing choke, total depth 3,697 feet. Same company's No. 5 P. R. Guerin, top sand 3,762 feet, initial production 114 bbls. per hour through three-fourths-inch tubing choke, total depth 3,785 feet. Same company's No. 4-A Ida Holt, top sand 3,759 feet, initial production 114 bbls. per hour through three-fourths-inch tubing choke, total depth 3,780 feet. Same company's No. 4 Kangerga, top sand 3,633 feet, initial production 72 bbls. per hour through three-fourths-inch tubing choke, total depth 3,674 feet. Same company's No. 16 Kangerga, top sand 3,627 feet, initial production 95 bbls. per hour through tubing, total depth 3,665 feet. Same company's No. 3 H. A. Piercy, top sand 3,700 feet, initial production 112 bbls. per hour through three-fourths-inch tubing choke, total depth 3,669 feet. Same company's No. 10 Plowman, top sand 3,650 feet, initial production 98 bbls. per hour through three-fourths-inch tubing choke, total depth 3,689 feet. Same company's No. 3 W. P. Price, top sand 3,736 feet, initial production 106 bbls. per hour through eleven-sixteenths-inch tubing choke, total depth 3,815 feet. Same company's No. 1 Aggie Scott, top sand 3,722 feet, initial production 35 bbls. per hour through three-fourths-inch tubing choke, total depth 3,798 feet. Same company's No. 5 J. E. Wheelis, top sand 3,789 feet, initial production 88 bbls. per hour through three-fourths-inch tubing choke, total depth 3,793 feet. Same company's No. 7 Wheelis, top sand 3,736 feet, initial production 99 bbls. per hour through one-fourth-inch tubing choke, total depth 3,742 feet.

H. L. Hunt's No. 2 Russell, top sand 3,750 feet, initial production 225 bbls. per hour through open tubing, total depth 3,798 feet. Indian Syndicate's No. 1 Denson, top sand 3,632 feet, initial production 250 bbls. in 12 hours through open tubing, total depth 3,665 feet. Lion Oil & Refining Co.'s No. 2 W. P. Smith, top sand 3,696 feet, initial production 25 bbls. per hour through tubing, total depth 3,770 feet.

Shell Petroleum Corp.'s No. 1 W. P. Neal, top sand 3,805 feet, initial production 85 bbls. per hour through open tubing, total depth 3,808 feet. Sinclair Oil & Gas Co.'s No. 3-B Mayfield, top sand 3,616 feet, initial production 170 bbls. per hour through open tubing, total depth 3,627 feet. Sun Oil Co.'s No. 2 Barksdale, top sand 3,770 feet, initial production 85 bbls. per hour through five-eighths inch tubing choke, total depth 3,788 feet. Sun Oil Co.'s No. 2 Horach Shuler, top sand 3,646 feet, initial production 178 bbls. per hour through open tubing, total depth 3,657 feet. The Texas Company's No. 1 First Guaranty Bank, top sand 3,696 feet, initial production 6[illegible] bbls. per hour through three-fourths inch tubing choke, total depth 3,718 feet. The Texas Company's No. 1 Cora Hannah, top sand 3,615 feet, initial production 11[illegible] bbls. per hour through open tubing, total depth 3,630 feet. The Texas Company's No. 4 J. D. Stone, top sand 3,620 feet, initial production 75 bbls. per hour through 1-inch tubing choke, total depth 3,670 feet. Stevens and others' No. 1 Doctor Pickett, dry and abandoned, total depth 3,465 feet.

Smith County

Ben Banner's No. 1 Lee White, dry and abandoned, total depth 3,465 feet. Graham Brothers' No. 1 T. O. Wright, top sand 3,714 feet, initial production 8[illegible] bbls. per hour through three-fourths inch tubing choke, total depth 3,734 feet. C. Edman Perry's (formerly Adams and others) No. 1 T. O. Wright, top sand 3,773 feet, initial production 185 bbls. in 24 hours through tubing choke, total depth 3,790 feet.

Upshur County

Chatham Oil Co.'s No. 1 M. Fenton, top sand 3,750 feet, initial production

100 bbls. per hour through tubing, total depth 3,758 feet. Conservative Oil Co.'s No. 4 Victory, top sand 3,630 feet, initial production 110 bbls. per hour through 1-inch tubing choke, total depth 3,651 feet. East Texas Refining Co.'s No. 1 Mrs. Doby Rodden, top sand 3,713 feet, initial production 150 bbls. per hour through 1-inch tubing choke, total depth 3,723 feet.

Home Oil Co.'s No. 1 Mrs. F. D. Futrell, dry and abandoned, total depth 3,736 feet. Humble Oil & Refining Co.'s No. 2 G. W. Johnson, top sand 3,684 feet, initial production 104 bbls. per hour through three-fourths inch tubing choke, total depth 3,736 feet. Same company's No. 1 H. M. Reeves, top sand 3,644 feet, initial production 85 bbls. per hour through three-fourths inch tubing choke, total depth 3,656 feet. A. D. Kings' No. 1 Lloyd, top sand 3,690 feet, initial production 105 bbls. per hour through eleven-sixteenths inch tubing choke, total depth 3,710 feet. Margary Oil Co.'s No. 2 Victory, top sand 3,580 feet, initial production 153 bbls. per hour through open tubing, total depth 3,610 feet. Pace & Mitchin's No. 1 A. D. Adkins, top sand 3,749 feet, initial production 125 bbls. per hour through three-fourths inch tubing choke, total depth 3,761 feet. W. H. Peckham's No. 1 T. Wells, top sand 3,693 feet, initial production 130 bbls. per hour through three-fourths inch tubing choke, total depth 3,724 feet. Shell Petroleum Corp.'s No. 3 C. C. Landers, top sand 3,651 feet, initial production 135 bbls. per hour through open tubing, total depth 3,667 feet.

WILDCAT OPERATIONS IN TEXAS PANHANDLE

(Continued from Page 26)

Saunders et al's No. 2 Sullivan, 822 ft. from W and 231 ft. from NE, 160 ft. S, 264 ac. of N½, Sec. 136, Blk. 3, I.&G.N. Sur. ..... Will plug back to 3,275 ft. and shoot.

Sullivan & Ochiltree's No. 1-A Morse, 330 ft. S and W, N½ NE, Sec. 15, Blk. A-9 H.&G.N. Sur. ..... Rig up and S.D.

Tarber's No. 1 Saunders, 330 ft. N and W, Sec. 3, Blk. 1, B.B.&S.F. Sur. ..... Location.

Quicksand Oil Co.'s No. 1 Chapman, 250 ft. from N and E, Sec. 69, Blk. 25, H.&G.N. Sur. ..... Moving in material.

Vulcan Corp.'s No. 1 Carpenter, 330 ft. from S and E, Sec. 25, Blk. 25, H.&G.N. Sur. ..... Drlg. 225 ft.

HUTCHINSON COUNTY

Danciger O. & R. Co.'s No. 1 Johnson, 330 ft. N and W, SE, Sec. 34, Blk. Y, A.&B. Sur. ..... Spudded and S.D.

Deal O. & G. Co.'s No. 2 Sanford, 330 ft. N and E of N 80 ac., S 160 ac., Sec. 81, Blk. 46, H.&T.C. Sur. ..... S.D. 450 ft.

Huber Prod. Co.'s No. 1 Johnson Bros. (Premier), 330 ft. N and E of W 60 ac., N 80 ac., NW, Sec. 3, Blk. Y, A.&B. Sur. ..... S.D. 3,016 ft.

Smith & Daniels' No. 3 Pitcher, 990 ft. from S and 330 ft. from E, Sec. 19, Blk. M-31, T.C.R.R. Sur. ..... Drlg. 2,305 ft.

Skelly Oil Co.'s No. 1 Johnson Bros., 660 ft. S and W, SE, Sec. 30, Blk. Y, A.&B. Sur. ..... S.D. 3,115 ft.

Timms-Deatch's No. 4 Moore, 330 ft. N and W, Sec. 124, Blk. 4, I.&G.N. Sur. ..... Rig.

LIPSCOMB COUNTY

Okla. Public Service Co.'s No. 1 C. W. Jones, NE SW, Sec. 100, H.&T.C. Sur. ..... T.D. 5,003 ft.

LUBBOCK COUNTY

Center Oil Co.'s No. 1 Bowles Ranch ..... Small S.O. 1,133-40 ft.; S.D. 4,167 ft.

MOORE COUNTY

Gulf Prod. Co.'s No. 1 Burnett, 330 ft. from N and W, Sec. 356, Blk. 44, H.&T.C. Sur. ..... Drlg. 785 ft.

Interstate's No. 1 Nield, C NE, Sec. 18, Blk. 44, H.&T. C. Sur. ..... Location.

Pollard et al's No. 1 Hall, 330 ft. S and E, NE, Sec. 131, Blk. 3-T, T.&N.O. Sur. ..... Rig on ground.

Sunray Oil Co.'s No. 2 Jones, 330 ft. N and W, W½ SW, Sec. 164, Blk. 3-T, T.&N.O. Sur. ..... Rig on ground.

Texas Interstate P. L. Co.'s No. 1-23 Thompson, C N½ NE, Sec. 23, Blk. 44, H.&T.C. Sur. ..... Location.

Texas Interstate P. L. Co.'s No. 1-37 Sneed, C NW, Sec. 37, Blk. 6-T, T.&N.O. Sur. ..... Location.

Texas Interstate P. L. Co.'s No. 1 Coon, 2,025 ft. from N and 2,640 ft. from W, Sec. 149, Blk. 44, H.&T.C. Sur. ..... Drlg. 1,868 ft.

Texhoma Nat. Gas Co.'s No. 1 Coon-Sneed, center Sec. 8, Blk. 6-T, T.&N.O. Sur. ..... Cmtd. 12½-in. csg. 580 ft.

MOTLEY COUNTY

Matador Oil Corp.'s No. 1 Owens, C NE, Sec. 10, Blk. G, B.&B. Sur. ..... S.D. 520 ft.

OLDHAM COUNTY

Amalgamated German-American Oil Corp.'s No. 1 Norton, 330 ft. S and E, Sec. 12, T.&N.O. Sur. ..... S.D. 400 ft.

Chambers et al's No. 1 Herring, CNL, Sec. 20, Blk. S, G.C.&S.F. Sur. ..... Drlg. 2,372 ft.

PARMER COUNTY

Magnolia Pet. Co.'s No. 1 Wilson, 330 ft. from N and W of SE, Sec. 73, H. Kelly Sur. ..... Rigging up rotary.

ROBERTS COUNTY

Chicken Creek Oil Co.'s No. 1 Ledrick, 330 ft. N and W, Sec. 55, Blk. C, G.&M. Sur. ..... S.D. 1,415 ft.; moving in rotary.

Travis et al's No. 1 Cunningham, 330 ft. S and W, Sec. 74, Blk. M-2, H.&G.N. Sur. ..... S.D. 2,690 ft.

WHEELER COUNTY

Clarity et al's No. 1 Porter, 330 ft. S and W, SE, Sec. 3, Blk. A-9, H.&G.N. Sur. ..... S.D. for 6-in. csg. at 2,150 ft.

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 26)

GAINES COUNTY

Texas Consolidated Oil Co. et al's No. 1 Jones, 2,310 ft. from NE Sec. 4, Blk. A-8, P.S.L. Sur. ..... Total depth 4,700 ft.

GARZA COUNTY

Pandem Oil Corp.'s No. 1 Justice, 330 ft. from S and W of Sec. 12, Blk. 4, H.&G.N. Sur. ..... Spudded and shut down.

Penny & Posey's No. 1 Justice, 1,980 ft. from S and 1,650 ft. from E of Sec. 25, Blk. 6, H.&G.N. Sur. (3,500-ft. cable tool test) ..... Total depth 3,202 ft.

HOWARD COUNTY

Green O. & R. Co.'s No. 1 Denman, 990 ft. from S and 2,310 ft. from W Sec. 14, Blk. 29, Twp. 1s, T.&P. Sur. .. Spudded and shut down.

Merrick & Lamb's No. 2 Chalk, 990 ft. from the N and W lines of Sec. 125, Blk. 29, W.&M.W.R.R. Sur. ..... Drlg. 1,725 ft.; show oil 1,521 ft. and 1,620 ft.

IRION COUNTY

Davis et al's No. 1 Suggs, 1,560 ft. from S and 925 ft. from W Sec. 3,051, Blk. 28, H.&T.C. Sur. ..... Drlg. 3,365 ft.

Denny & Andrews' No. 1-A Tankersley, 200 ft. from S and 2,000 ft. from E of Sec. 709, J. P. Imhoff Sur. ... Shut down 463 ft.

Ellis Flanery Corp.'s No. 1 Nutt, 1,350 ft. from N and 450 ft. from E of Sec. 694, Kheikenholm Sur. ..... Drlg. 1,610 ft.

Stanolind Oil & Gas Co.'s No. 1 Williams, 1,320 ft. from S and E of Sec. 1,196, T.T.R.R. Sur. ..... Drlg. 6,425 ft.; small show oil and gas at 6,400-09 ft.

Straughn & Adkins Bros.' No. 1 Lee, 1,080 ft. from W and 420 ft. from N of Sec. 729, C. Kaiser Sur. ..... Drlg. 978 ft.

JONES COUNTY

Abers et al's No. 1 Burton, 150 ft. from S and 175 ft. from E of 43.4-acre tract in G. Martinez Sur. ..... Shut down 1,005 ft.

Standard Semi-steel Type Robinson Orifice Fitting, 125-lb. Working Pressure. Complete line includes all practical sizes and working pressures.

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NEARLY 13,500 IN SERVICE

LOVING COUNTY

Ervin & Mahres' No. 1 Thrope, 2,310 ft. from E and 330 ft. from S Sec. 46, Blk. 63, T.&P. Sur. ..... Shut down 810 ft.
Slack's No. 1 Lynd, 990 ft. NE and 330 ft. SE of Sec. 3, Blk. 2, W.&N.W. Sur. ..... Shut down 1,500 ft.
Falbre & Evans' No. 1 Dean, 330 ft. from NE and 990 ft. from NW Sec. 79, Blk. 33, H.&T.C. Sur. ..... Shut down 2,500 ft.
Lewis & Slagel's No. 1 Johnson, 330 ft. from N and 1,650 ft. from W Sec. 6, Blk. 56, Twp. 1, T.&P. Sur. ... Spudded and shut down.
Lockhart & Co.'s No. 3 Bowen & Wells, 330 ft. from NE and SE of Sec. 92, Blk. 1, W.&N.W. Sur. ..... Shut down 2,385 ft.
Tennant et al's No. 1 Martin, 990 ft. from NW and SW Sec. 66, Blk. 1, W.&N.W. Sur. ..... Shut down 1,400 ft.

MENARD COUNTY

Priest's No. 1 Sorrel, 1,000 ft. from E and 300 ft. from S cor. Sec. 132, E.L.&R.R. Sur. ..... Shut down 2,860 ft.

PECOS COUNTY

Dittman's No. 1 Sanford, 330 ft. from NW and 1,650 ft. from NE of Sec. 55, Blk. 10, H.&G.N. Sur. ..... Total depth 1,300 ft.
Slaughter et al's No. 1 Sun Yates, 60 ft. S of Sun Oil Co.'s No. 1 Yates, Sec. 59, Blk. 1, L.&G.N. Sur. .... Moving in material.

REAGAN COUNTY

Carl Cromwell et al's No. 1 University, 1,320 ft. from S line and 1,320 ft. from E line of Sec. 4, University Blk. 7 ..... Spudded 55 ft.
Big Lake Oil Co.'s No. 6-C University, 1,370 ft. from S and 1,000 ft. from E Sec. 12, Blk. 2 ..... Rig.

REEVES COUNTY

Cunningham et al's No. 1 Wright, 1,320 ft. from S and W Sec. 58, Cassel's Sur. ..... Spudded and shut down.
F. McDorman et al's No. 1 Ray Roberts et al, 2,310 ft. from S and E lines of Sec. 32, Blk. 59, P.S.L. Sur. .. Location.
James & Milton's No. 1 Patterson, 330 ft. from N and W of Sec. 21, Blk. 73 ..... Shut down 3,150 ft.; show oil and gas 2,855-65 ft.; show oil 3,120 ft.
Lee O. White et al's No. 1 Hershersor, 330 ft. from N and W lines of Sec. 5, Blk. 51, Twp. 10, T.&P. Sur. ... Shut down 5,044 ft.

RUNNELS COUNTY

Dutton et al's No. 1 Dean, 5,475 ft. from NE and 1,048 ft. from NW in J. Heil Sur. No. 619 ..... Shut down 2,556 ft.

SCHLEICHER COUNTY

Eastland Oil Co.'s No. 1 Joe Tisdale, C Sec. 20, Blk. M, G.H.&S.A. Sur. ..... Shut down 4,500 ft., contract depth.
Wesner et al's No. 1 Nicks, 2,310 ft. from N and 2,362 ft. from E of Sec. 77, Blk. LL, T.C. Sur. ..... Fishing tools 4,275 ft.
George Wilson's No. 1 Page, Sec. 40, Blk. L, 1,320 ft. from N, 1,570 ft. from W, G.H.&S.A. Sur. ..... Shut down 5,053 ft.

SCURRY COUNTY

G. E. Dickman and R. B. Pender et al's No. 1 F. C. Davis, 1,000 ft. N and 1,770 ft. W of SE cor. of Sec. 275, Blk. 2, H.&T.C. Sur. ..... Shut down 5,100 ft.
Scurry County Oil Exchange's No. 1 Earnest, 2,310 ft. from N and W Sec. 48, Blk. 3, H.&G.N. Sur. ..... Spudded and shut down.
Seifert & Dibble's No. 1 T. M. Blackburn, 2,310 ft. from N and 2,310 ft. from W line of Sec. 153, Blk. 97, H.&T.C. Sur. ..... Shut down 3,500 ft.
Simon & Brock et al's No. 1 Cruse, 2,310 ft. from S and E Sec. 119, Blk. 97, H.&T.C. Sur. ..... Show oil 1,798, 1,820, 1,850 ft.; shut down 2,500 ft.

TERRELL COUNTY

Big Bend Oil Co.'s No. 1 Bassett, C NW Sec. 156, Blk. D, M.-K.-T. Sur. ..... Shut down 2,669 ft.
Keek Pecos Trust Co.'s No. 1 Hamilton, C Sec. 6, Georgetown Ry. Sur. ..... Shut down 3,150 ft.
Miller Bros.' No. 1 Allison & Burke, C NW cor. Sec. 10, Blk. 176, T.&P. Sur. ..... Shut down 120 ft.
Mid-Kansas Oil & Gas Co.'s No. 1 Goode, 2,153 ft. from E and 330 ft. from S Sec. 16, Blk. 101, G.C.&S.F. Sur... Shut down 6,120 ft.
Jones et al's No. 1 Pankenham, C SE NW Sec. 42, Blk. B-2, C.C.S.D.&R.G.N.G. Sur. ..... Shut down 2,545 ft.

TOM GREEN COUNTY

Belding & Dutton's No. 1 Norsworthy, 1,640 ft. from S and 587 ft. from E of John McNeese Sur. ..... Shut down 760 ft.; show oil and gas 725 ft.
Mintex Oil Co.'s No. 1 Campbell Est., 446 ft. from S and 630 ft. from W of Sec. 180, Dist. No. 11, S.P. Sur. ... Shut down 1,994 ft.
Pratt & Hancock's No. 2 Lewis, 100 ft. N and 330 ft. E of most northerly SW cor. of Joshua S Grant Sur No. 3 ..... Shut down 200 ft.

UPTON COUNTY

Cosby Prod. & Roy. Co.'s No. 1 Lane, 2,310 ft. from S and 1,650 ft. from W Sec. 36, Blk. 1, M.-K.-T. Sur... Swabbed 142 bbls. in 12 hours; will plug; total depth 2,330 ft.; to put on pump.
Rankin et al's No. 1 Cordova Union Land, 660 ft. from N and E Sec. 4, G.C.&S.F. Sur., 1¼ miles S of Rankin ..... Fishing bailer 3,786 ft.

VAL VERDE COUNTY

Independent Operators' No. 1 Whitehead, SE SE Sec. 10, Blk. 4, L.&G.N. Sur., elev. 1,175 ft. ..... Shut down 5,360 ft.
G. O. Owens' No. 1 Mills, Sec. 128, Blk. 1, L.&G.N. Sur., elev. 2,130 ft. ..... Shut down 6,780 ft.

WARD COUNTY

Boogher's No. 1 fee, 225 ft. from SE and 3,553 ft. from NE Sec. 11, Blk. 5, H.&T.C. Sur. ..... S.D. 2,111 ft.
Bradford-Bentley's No. 1 Beatty, 330 ft. from SW and NW of Sec. 3, Blk. 34, H.&T.C. Sur. ..... Location.
Buster Black's No. 1 Hall & Roberts, 990 ft. from NE and 1,650 ft. from NW Sec. 17, Blk. 32, H.&T.C. Sur... Drlg. 2,342 ft.
Central Oil & Gas Co.'s No. 1 Barrow, 330 ft. from NW and 1,263 ft. from SW Sec. 55, J. W. Jackson Sur. ..... Shut down 2,333 ft.
H. V. Greer's No. 1 Carr, 150 ft. from NW and 510 ft. from SW Sec. 12, Blk. 5, H.&T.C. Sur. ..... Spudded and shut down.
Hankinson et al's No. 1 Emery, 3,090 ft. from SE and 510 ft. from SW Sec. 26, Blk. 5, H.&T.C. Sur. ..... Shut down 2,238 ft.
Moran & Miller' No. 1 Boogher, 3,603 ft. from NE and 1,302 ft. from SE Sec. 11, Blk. 5, H.&T.C. Sur. ..... Shut down 715 ft.
R. F. Owens' No. 1 Lee, 1,344 ft. from NW and 4,533 ft. from SW Sec. 1, J. Howe Sur. ..... Spudded and shut down.
Peck & Fuglar's No. 1 Merritt, 3,063 ft. from NE and 1,698 ft. from SE Sec. 11, Blk. 5, H.&T.C. Sur. ..... Total depth 2,196 ft.; top pay 2,155 ft.; 1,200 ft. oil in hole.
Prairie Oil & Gas Co.'s No. 1 Edmonson, 330 ft. from NW and 2,310 ft. from SW of Sec. 23, Blk. 5, H.& T.C. Sur. ..... Rig.
Prairie Oil & Gas Co.'s No. 3 Edmonson, 330 ft. from NW and SW of Sec. 23, Blk. 5, H.&T.C. Sur. ..... Location.
Rector Oil Co.'s No. 1 Smith, 1,320 ft. from N and E, Sec. 22, Blk. A, G.M.M.B.&A. Sur. ..... Shut down 3,602 ft.
Rexford et al's No. 2 Johnson, 2,300 ft. from SE and 4,450 ft. from NE Sec. 11, Blk. 5, H.&T.C. Sur. ..... Drlg. 2,067 ft.
Paul Ryan et al's No. 1 J. S. Reynolds, 4,110 ft. from NE line and 150 ft. from NW line, Sec. 12, Blk. 5, H.&T.C. Sur. ..... Drlg. 2,040 ft.
Sudderth & Carey's No. 1 J. E. Boogher et al, 150 ft. from SW and SE lines of Lot 24, Sec. 11, Blk. 5, H.&T.C. Sur. ..... Location.
Stanolind Oil & Gas Co.'s No. 1 Brown, 330 ft. from NW and SW Sec. 36, Blk. B-29 ..... Drlg. 850 ft.
Shipley et al's No. 1 Monroe, 330 ft. SE SW Sec. 3, Blk. 1 ..... Shut down 4,545 ft.
White et al's No. 1 Burtner, 150 ft. from NE and 515 ft. from SE of Sec. 8, Blk. 32, H.&T.C. Sur. ..... Shut down 755 ft.

WINKLER COUNTY

Liner Drlg. Co.'s No. 1 Campbell, 350 ft. from N and E cor. Sec. 2, Blk. B-8 ..... Shut down 4,640 ft.

EAST CENTRAL TEXAS WILDCATS

(Continued from Page 25)

GREGG COUNTY

N. M. Acre et al's No. 1 S. J. Boles, 16 ft. S and 153 ft. E of SE cor. of William Carleton Sur. but in Carl Rhodes Sur. ..... Drlg. 2,700 ft.; top pay 2,531 ft.
Alma Petroleum Co.'s No. 1 J. B. Watson, 330 ft. from S line and 330 ft. from E line of 35-ac. tract, Thompson Allen Sur. ..... Spudded.
Angles and Daniel's No. 1 J. C. Clarborne, 335 ft. from N line and 164 ft. from E line of NW cor. of Clarborne 50-ac. tract in the L. Baty Sur. ..... Preparing to spud.
Artic Petroleum Co.'s No. 1 King, 57 ft. S of most northerly NW cor. and 104 ft. E at right angles in 2-ac. tract, Chisum Sur. ..... Sidetracked and drlg.
Atlantic and Pacific's No. 1 O. R. Johnson, 240 ft. from S line and 390 ft. from W line of survey, L. J. Rigsby Sur. ..... Derrick.
Atlantic Oil Producing Co.'s No. 1 E. Burnside, 330 ft. due E of where E line intersects Sabine River, F. W. Johnson Sur. ..... Location.
Atlantic Prod. Co.'s No. 1 J. J. Fuller, 394 ft. from E and 343 ft. from S of 50-ac. tract and lease, Mowery Irwin Sur. ..... Set csg.; waiting on cement; T. D. 3,656 ft.
Barnsdall Oil Co.'s No. 1 G. E. Adams, 1,150 ft. from S and 3,720 ft. from W of G. W. Hooper Sur. ..... Derrick.
Barnsdall Oil Co.'s No. 1 Ferguson, 104 ft. from S and 150 ft. from E of 37-ac. tract in H. A. Holet Sur... Drlg. 3,588 ft.
Bagby et al's No. 1 Key, 1,080 ft. from S and 265 ft. from E of Rigsby Sur. ..... Derrick.
Bishop Oil Corp.'s No. 1 Richie, N offset to Shasta Oil Co.'s No. 1, Carl Rhodes Sur. ..... Derrick.
Brannon et al's No. 1 W. A. Horton, center of 2-ac. lease, John Ruddle Sur. ..... Spudded.
Buchanan et al's No. 1 George Ritchie, 120 ft. N and 15 ft. W of Monzell and Currie's No. 1 Church Block No. 4, M. Dillard Sur. ..... Derrick.
Bramlette's No. 1 Goforth, 170 ft. due N of NW cor. of Sun-Hilburn-Lloyd lease in Chisum Sur. ..... Rig up and shut down.
Bob et al's No. 1 T. L. Broy, 290 ft. from E and 1,646 ft. from S of H. A. Hoidt Sur. ..... Derrick.
M. T. Beeler's No. 1 Finley and Thomas, 150 ft. from N and 150 ft. from W of 10-ac. lease, C. H. Alexander Sur. ..... Derrick.
Branson et al's No. 1 J. J. Fuller, 1,050 ft. from N and 170 ft. from W of survey, M. Alexander Sur. .. Derrick.
Cal Pet. Corp.'s No. 1 M. Clemmens, 250 ft. from S line and center of E and W lines of lease, M. Mann Sur. ..... Shut down 863 ft.
T. J. Connor's No. 1 Forshee estate, 150 ft. from N line and 150 ft. from W line of lease, H. R. Hokit Sur. ..... Derrick.
Cox and Hammon's No. 1 L. E. Lacy, 330 ft. from E line and 100 ft. N of railroad, J. Ruddle Sur. ..... Set csg.; waiting on cement.
Cox and Hammon's No. 1 L. A. Rodden, 349 ft. from N line and 330 ft. from W line of 110-ac. tract, L. J. Rigsby Sur. ..... Shut down 2,300 ft.
Campbell and Lee's No. 1 A. Johnson, 170 ft. from N line and 134 ft. from E line of 11-ac. lease in the M. Dillard Sur. ..... Set 10-in. csg. 836 ft.
Columbia Oil & Gas Co.'s No. 1-A Harley, 650 ft. E and 300 ft. S of SE cor. of Laura Walker 45-ac. tract, William Robinson Sur. ..... Derrick.
Devonian Oil Co.'s No. 1 L. C. Ingram, 1,120 ft. from N and 1,000 ft. W of SW cor. of survey, B. W. Witchet Sur. ..... Spudded.
Empire Gas & Fuel Co.'s No. 1 J. T. Jeter, 317 ft. from S line and 150 ft. from E line of D. B. Choate Sur. ..... Location.
Empire Gas & Fuel Co.'s No. 1 Jeter, 440 ft. from E and 200 ft. N of right of way, Wm. Tyndale Sur. .... Testing; T. D. 3,565 ft.
Ethridge's No. 1 Weiss, 330 ft. from W line and 330 ft. from S line of survey, Juan Armendaris Sur. .... Spudding.
Dr. J. C. Falvey et al's No. 1 fee, 150 ft. from S and 150 ft. from W of 55-ac. tract, Marshall Mann Sur. ..... Drlg. 3,628 ft.
Feagan & Salmon's No. 1 Thornton, 300 ft. E of Oriental Oil Co.'s No. 1 Alexander ..... Waiting on cement 1,000 ft.
E. E. Fogleson's No. 1 J. B. Doley, 150 ft. from S line and 460 ft. from W line of tract, W. M. Castleberry Sur. ..... Location.
Grossy et al's No. 1 Morgan, 325 ft. from N and 900 ft. of Martha Dillard Sur. ..... Spudded.
Greer's No. 1 L. M. Colburn, 150 ft. from E and 150 ft. from S of 45-ac. lease, 5,700 ft. from E and 550 ft. from N of survey, Henry Hathaway Sur. ..... Drlg. 3,250 ft.
Gulf Prod. Co.'s No. 1 Fonville, 330 ft. from S and E of 100-ac. lease in Wm. Tyndale Sur. ..... Drlg. 3,030 ft.
Gulf Prod. Co.'s No. 1 Shephard, 330 ft. from S and W of most southerly SW cor. of Rains Sur. ..... Drlg. 3,462 ft.; top Austin chalk 3,420 ft.
Harper Petroleum Corp.'s No. 1 Woodley Jones, 2,000 ft. from N line and 3,900 ft. from E line of William H. Castleberry Sur. ..... Derrick.
Humble Oil & Refining Co.'s No. H. M. Lawrence, 640 ft. from N and 319 ft. from W of 100-ac. tract, David Ferguson Sur. ..... Derrick.
Humble Oil & Refining Co.'s No. 1 J. E. Sheppard, NE cor. of 215-ac. tract in I. Allen Sur. ..... Derrick.
Jackson et al's No. 1 fee, 2,040 ft. from N and 2,000 ft. from E of M. Dillard Sur. ..... Drlg. 3,500 ft.
Johnston's No. 1 Williams, 125 ft. from N and W of 2-ac. tract, Van Winkle Sur. ..... Derrick.
K. B. Oil Co.'s No. 1 Dickson, 150 ft. from S and 150 ft. from W of 5-ac. lease, Mary Van Winkle Sur. ..... Drlg. 300 ft.
Kiltner and Easterling's No. 1 Missie Young, 330 ft. S and 350 ft. E of SW cor. of the H. Edwards Sur. in C. Rhodes Sur. ..... Drlg. 2,340 ft.
Kimsey-Trimble's No. 1 Griffith Davis, 922 ft. E of N line of Griffith Davis 119.5-ac. tract from NW cor. of same and 145 ft. at right angles, W. P. Chisum Sur. ..... Waiting on cement 3,630 ft.
Lockhart et al's No. 1 Jones, 200 ft. from N and center E and W of 19-ac. lease in Hooper Sur. ..... Rigged up and shut down.
Lone Star Oil Co.'s No. 1 J. A. Butts, 165 ft. from NE offset to Ray L. Martin's No. 1 Dickson, Mary Van Winkle Sur. ..... Set csg. 160 ft.
Magnolia Petroleum Co.'s No. 1 Key, 300 ft. from N and 150 ft. from E of 64-ac. lease, John Ruddle Sur... Oil sand 3,540 ft.; run csg.; T. D. 3,546 ft.
O'Bell and Wallace's No. 1 E. L. Walker, 330 ft. N of S line of lease and 330 ft. SW of center of river on 20-ac. lease, John Tate Sur. ..... Location.
Prairie Oil & Gas Co.'s No. 1 Thomas, 330 ft. from N line and 375 ft. from E line of lease, J. M. Norris Sur. ..... Location.
Prairie Oil & Gas Co.'s No. 1 W. H. York, 620 ft. from W line and 1,900 ft. from S line of survey, M. Dillard Sur. ..... Location.
Ross et al's No. 1, located on Findley & Thomas 50-ac. tract, 150 ft. from S line of 6.66-ac. lease, C. H. Alexander Sur. ..... Derrick.
M. C. Sellie's No. 1 Robert Fisher, 263 ft. from E line of survey and 265 ft. S of center of highway, Wm. G. Painter Sur. ..... Rig up.

Simplex Oil Co.'s No. 1 J. E. Lawther, 330 ft. from S line and 330 ft. from W line of 36.5-ac. lease, John Moffitt Sur. ....Rig up.
H. P. Smith's No. 1 Elder & Son, 141 ft. from W line of lease and center N and S of 5-ac. lease in Van Winkle Sur. ....Drlg. 1,020 ft.
Earl Sneed et al's No. 1 A. M. Kensel, 293 ft. from N and 260 ft. from W of N 23-ac. lease in 94 acres, H. H. Kirk Sur. ....Location.
Stanolind Oil & Gas Co.'s No. 1 Nancy Redford, 478 ft. from S line and 462 ft. from W line of 19-ac. tract, John Blair Sur. ....Location.
Stanolind Oil & Gas Co.'s No. 1 Beulah Jones, 330 ft. S line and 378 ft. from E Line of 100-ac. tract, G. W. Hooper Sur. ....Building derrick.
Sun Oil Co.'s No. 1 J. W. Akin, 330 ft. from N and W lines of 25.68-ac. tract in George A. Thomason Sur. ....Top Austin chalk 3,490 ft.; set csg. 3,525 ft.
Superior Oil Co.'s No. 1 Pritchard, 330 ft. from N and W of 40-ac. lease in Francis Johnson Sur. ....Coring 3,506 ft.
Tidal Oil Co.'s No. 1 Lake Divernia Fish and Game Club, 300 ft. from N and 550 ft. from W lines of tract in William G. Painter Sur. ....Rig up and shut down.
Valentine Oil Co.'s No. 1 Goyne-Hughey, 6,100 ft. from S and 6,800 ft. from W of survey, Mary Van Winkle Sur. ....Rigging up.
Ziegler Oil Co.'s No. 1 L. D. Campbell, 540 ft. from N and 319 ft. from E of 72½-ac. tract, David Ferguson Sur. ....Derrick.

HENDERSON COUNTY

Seven Wells Corp.'s No. 1 Douglas, 767 ft. from N and 833 ft. from E of tract in K. H. Douglas Sur. ....Drlg. 950 ft.

HOPKINS COUNTY

Roark et al's No. 1 Taylor, 220 ft. from N and W lines of 80-ac. tract in the John Polk Sur. ....Shut down 540 ft.

HOUSTON COUNTY

Apex Drlg. Co.'s No. 1 Thompson Bros., 250 ft. out of NW cor. of 300-ac. tract in John Shears Sur. ....Drill stem test 2,354-64 ft.; estimated 20,000,000 ft. gas; shut down.
Ramsland and Ramsland's No. 1 Pennington, 750 varas W of E line and 500 varas from S line of survey on 186-ac. tract, Ramond LaGarsa Sur. ....Drlg. 1,500 ft.
Phillips and Phillips' No. 1 Kennedy Bros., 485 varas out of SW cor. of 100-ac. tract, Jose M. Procella Sur. ....Rig up and shut down.
Snow's No. 1 Harron, 300 ft. out of NE cor. of 327-ac. tract, J. P. Procella Sur. ....Spudded and shut down 37 ft.

HUNT COUNTY

Branson et al's No. 1 Gray ....Location.
Foster and Earl's No. 1 Whitney and Clark, 150 ft. out of NW cor. of 50-ac. tract in W. H. Landrum Sur. ....Shut down 350 ft.
M. S. Hammond's No. 1 W. H. Adams ....Location.
M. S. Hammond's No. 1 R. L. Gray ....Derrick.
Russell et al's No. 1 Brooks and Quattlebaum ....Shut down 1,455 ft.

LAMAR COUNTY

Indian States Oil Co.'s No. 1 W. T. Watson in Ignatius And Sur. ....Shut down 4,026 ft.
Puritan's No. 1 George Parr, 2,000 ft. from W of Frisco Railway and 1,000 ft. from E line of R. Russell Sur. ....Derrick standing.

LEON COUNTY

Cooper et al's No. 1 Lynch, 4,000 ft. from W line and 250 ft. N from the S line of Thomas H. Gardner Sur., and in 300-ac. tract ....Preparing to start up; T. D. 1,931 ft.
Sun Oil Co.'s No. 2 Grayson ....Drlg. 4,285 ft.
Sun Oil Co.'s No. 3 Grayson, 1,320 ft. from NE and 150 ft. from SE of tract, Marguez Sur. ....Location.

MORRIS COUNTY

Dumas et al's No. 1 Tom Ball, 1,046 ft. from E and 148 ft. from S of 71-ac. tract, A. S. Young heirs Sur. ....Derrick.

NACOGDOCHES COUNTY

Sunte et al's No. 1 A. F. Boatman, 330 ft. from S and 150 ft. from W of 67-ac. tract, William A. Moore Sur. ....Shut down 1,605 ft.
Churchill-Armstrong's No. 1 Max W. Hart, 2,640 ft. from N line and 2,640 ft. from S of N line of survey, George Pollett Sur. ....Derrick.
Foreman and Weller's No. 1 Norris, 60 ft. NW of E line and 420 ft. S of road in 73.5-ac. tract, Hossea Y. Barbo Sur. ....Derrick.
Gulmer et al's No. 1 Nice Well, 18 miles SE of Nacogdoches, 600 ft. from S and 150 ft. from W of Wells tract in A. Cherino Sur. ....Reaming 3,300 ft.
Joiner and Henson's No. 1 Andy Legg, 330 ft. from N and 330 ft. from W of tract, John Durst Sur. ....Shut down 3,920 ft.
Scully & Harwell's No. 1 R. L. Driver, 1,600 ft. from SE cor. of P. B. Ballard 125-ac. tract, 15 miles SE of Nacogdoches in Patricia De Torres Sur. ....Shut down 2,642 ft.
Taylor-Vaughn's No. 1 Dixon Greer, 180 ft. from W and 450 ft. from N lines of 60-ac. tract in the M. G. Herrera Sur. ....Shut down 250 ft.; shale.
Big Indian Oil Co.'s No. 1 J. N. Stewart, center of 79-ac. tract in the Jose Ignacio Ybarbo Sur. ....Shut down 2,235 ft.

RAINS COUNTY

Berry and Hale's No. 1 Ownsby, 150 ft. N and 1,100 ft. from E of most easterly SE cor. of survey, Alexander Sur. ....Preparing to start drlg.; T. D. 2,095 ft.

RED RIVER COUNTY

Doyle and Jondreau's No. 1 V. S. Griffin, 700 ft. from N line and 650 ft. E of W line of survey, J. C. Brown Sur. ....Derrick.
Dropplemean and Bundy's No. 1 J. W. Cunningham, 350 ft. from the S and 1,046 ft. from the E lines of B. M. Ballard Sur. ....Rig up.
Harris & Joiner's No. 1 E. Howison, 225 ft. S, 185 ft. W of 79-ac. tract, William Humphreys Sur. ....Shut down 1,940 ft.
Concord Oil Co.'s No. 1 J. R. Dellahunty, 500 ft. from N of Isaac Moore Sur. and 300 ft. E of E line of Robert Glass Sur. ....Preparing to resume drlg.; T. D. 750 ft.

ROCKWELL COUNTY

J. F. Barron's No. 1 H. L. Lofland, center of 60-ac. tract in W. M. Bird Sur. ....Waiting on csg.; T. D. 120 ft.

KILGORE AREA—RUSK COUNTY

Friedman Oil Corp.'s No. 1 Mayfield, 330 ft. from N line and 330 ft. from W line of 20-ac. lease, W. R. Cooke Sur. ....Drlg. 2,700 ft.
Harry Elliott's No. 1 Carroll, 175 ft. from N and 300 ft. from E of 7-ac. tract, W. R. Cook Sur. ....Location.
Magnolia Pet. Co.'s No. 1 W. P. Moore, 330 ft. from N line and 330 ft. from S line of lease, J. Ellington Sur. ....Drlg. 208 ft.
Raitman's No. 1 W. P. Moore, 240 ft. from S and 330 ft. W of NW cor. of W. P. Moore 25-ac. lease, H. Wiggins Sur. ....Derrick.
Deep Rock Oil Co.'s No. 1 Stone, 208 ft. from N line of lease, J. B. Cadena Sur. ....Location.
Gulf Production Co.'s No. 1 Hoxey Johnson, 1,100 ft. from N line and 325 ft. from E line of H. B. Dance Sur. ....Location.

JOINER POOL—RUSK COUNTY

Armstrong's No. 1 Alford, 151 ft. from S and 1,080 ft. from W of survey, T. J. Moore Sur. ....Derrick.
Astnon's No. 1 Alford, 330 ft. out of NE cor. of 11-ac. lease, H. H. Penny Sur. ....Derrick.
Bullock's No. 1 Alford, 1,300 ft. from S and 150 ft. from W of survey, T. J. Moore Sur. ....Shut down 2,952 ft.
Campbell Oil Co.'s No. 1 Compton, 600 ft. from N and W line of Simon Del Rio Sur., 1½ miles NW of Minden ....Derrick.
Golding and Murchison's No. 1 Griffin, 539 ft. from N line and 115 ft. from W line of lease, J. B. Cadena Sur. ....Location.
Jackson's No. 1 H. C. Minor, 210 ft. from N line and 330 ft. from E line and center of W and S lines of 27-ac. lease, William Killen Sur. ....Location.
Mass and Tucker's No. 1 Matthews, 3,244 ft. from N, 4,356 ft. from E, Dalines Cartimas Sur. ....Shut down 3,300 ft.
H. C. McBride's No. 1 Sue Hale, 150 ft. from S and 150 ft. from W of Sue Hale 88-ac. tract, John Darley Sur. ....Set 12½-in. csg. 212 ft.
Nat Saddler's No. 1 Ed Sparks, 350 ft. from E, 150 ft. from S of survey, L. C. Riggs Sur. ....Shut down 2,121 ft.
Oliphant et al's No. 1 W. Alford, 330 ft. from S line and 330 ft. from E line of 40-ac. lease ....Location.
Pitts et al's No. 1 Freeman, 1,000 ft. N of S line and 1,000 ft. E of W line of 181-ac. tract, J. Watkins Sur. ....Rig blew down.
Priest et al's No. 1 Mayfield, 155 ft. from N and W lines of 22-ac. lease in Daniel Clark Sur. ....T. D. 2,870 ft.
Ramusson et al's No. 1 F. J. Cox, 330 ft. from S line and 330 ft. from W line of tract, R. H. Penny Sur. ....Derrick.
Stroube and Stroube's No. 1 Barton, 500 ft. N of Stroube and Collins' No. 1 Barton M. McCabe Sur. ....Location.

SMITH COUNTY

Brookshire et al's No. 1 S. S. Cook, 200 ft. from S line and center of E and W lines of 10-ac. tract in Juan Vargus Sur. ....Set 12½-in. csg. 145 ft.
Bunte et al's No. 1 Atkinson, 1,000 ft. from S line and 1,000 ft. from N line of 330-ac. tract, Calloway Dean Sur. ....Derrick.
Cotton Belt Oil Co.'s No. 1 C. S. Jackson, 600 ft. from N and 500 ft. from W of 39.88-ac. tract, Henry Mickleborough Sur. ....Fishing for drill stem; T. D. 4,095 ft.
H. M. Lemaster's No. 2 T. W. Wright, center of E 4 acres of an 8-ac. tract in the Juan Vargus Sur. ....Derrick.
Morrison's No. 1 I. Roy, 330 ft. N and E from SW cor. of 87-ac. tract in Henry Cools Sur. ....Shut down 3,900 ft.
Phillips & Phillips' No. 1 Anna Morrison ....Set 10-in. csg. 33 ft.; shut down.
M. M. Rowand et al's No. 1 Gibbons, 1,800 varas from W and 250 varas S of river (which is N line of survey), J. M. Garcia Sur. ....Shut down 3,610 ft.
Tytex Oil Co.'s No. 1 Alex Weldert, 2,030 ft. from S and 535 ft. from E lines of Franklin T. Bodenheimer Sur. ....Derrick.
Vitex' No. 1 Irion, 150 ft. from S and E lines of 50-ac. tract in Mary Hughes Sur. ....Shut down 1,200 ft.
Yarber et al's No. 1 R. G. Wright ....Derrick.

TITUS COUNTY

Perry V. Cook's No. 1 M. C. Rogers, center of SW of Moore Sur. ....Shut down 2,530 ft.
Joiner et al's No. 1 Clayton Brown ....Shut down 2,250 ft.
Venza Oil Co.'s No. 1 McGill, 450 ft. from S and 662 ft. from W of H. C. Riggs Sur. ....Shut down 6,290 ft.

UPSHUR COUNTY

Cal Petroleum Corp.'s No. 2 W. F. Glynn, 909 ft. from S line and center of E and W lines of tract, G. W. Hooper Sur. ....Location.
Cal-Tex Corp.'s No. 1 Taylor, 250 ft. N and E of SE cor. of Hargrave lease, Marshall Mann Sur. ....Waiting on cement.
C. G. Glasscock's No. 1 T. M. Collins, center of 1-ac. tract in the Marshall Mann Sur. ....Location.
Callahan et al's No. 1 Lee R. Kay, 660 ft. from N and E lines of Charles O'Neal Sur. ....Derrick.
Calhoun et al's No. 1 J. R. Penn, 345 ft. from S line and E line of Penn 104-ac. tract, Joseph Manning Sur. ....Shut down 3,718 ft.
Cole and Butler's No. 1 D. F. Guest, 300 ft. out of NE cor. of Guest 139-ac. tract and survey ....Derrick.
Compton and Letts' No. 1 J. C. Wilsford, 300 ft. from E line and 2,700 ft. from S line of survey, L. Lomzollas Sur. ....Drlg. 2,880 ft.
Daisy Oil & Gas Co.'s No. 1 B. F. Phillips, 200 ft. out of SE cor. of 64-ac. tract, P. Whitestone Sur. ....Shut down 3,722 ft.
Eastland Oil Co.'s No. 1 O. M. Victory, 330 ft. from S line and 500 ft. from the W line of survey, E. A. J. Evans Sur. ....Rigging up.
Glasscock et al's No. 1 T. Wells, 250 ft. from N line of survey and 1,300 ft. from W line of farm on gin site tract, G. W. Hooper Sur. ....Location.
Humble Oil & Refining Co.'s No. 1 Johnson, 330 ft. from S and W of 100-ac. tract of G. W. Hooper Sur. ....Drlg. 3,632 ft.
Humble Oil & Refining Co.'s No. 1 J. Phillips, 330 ft. from N line and 330 ft. from W line of lease, H. Edwards Sur. ....Location.
Humble Oil & Refining Co.'s No. 1 C. T. Shelton, 330 ft. from W line of S 59-ac. tract and 369 ft. from S line of survey, William King Sur. ....Location.
A. D. King's No. 1 Lloyd, 156 ft. from N line of survey and 288 ft. from E line of 4-ac. tract, D. Sanches Sur. ....Testing 3,690 ft.
J. L. Roberts' No. 1 Anna L. Jenkins, 330 ft. from E line and center of N and S lines of 37.5-ac. tract, H. Edwards Sur. ....Derrick.
Sun Oil Co.'s No. 1 A. J. Walkins, 300 ft. from N and 49 ft. from E line of 324-ac. tract, J. Pineda Sur. ....Location.
Treco Oil Co.'s No. 1 A. D. Adkins, center of 6-ac. lease in the William King Sur. ....Drlg. 2,230 ft.
Smith Bros.' No. 1 J. W. Davis, 400 ft. from N and 300 ft. from W lines of S 200 acres of J. W. Davis 380-ac. tract in John Burleson Sur. ....Set 10-in. at 97 ft.
J. R. Smith's No. 1 J. B. Webb, 200 ft. N and 489 ft. W of SE cor. of W 20 acres of 71-ac. tract, G. W. Hooper Sur. ....Derrick.
Sorrels & Duffey's No. 1 J. W. Wooden, 300 ft. from E and 300 ft. S of survey, Isham Williams Sur. ....Fishing for core barrel.
Sun Oil Co.'s No. 2 Watkins, 1,320 ft. N and 1,360 ft. W of most southerly SE cor., Jose Rinoda Sur. ....T. D. 3,711 ft.; estimated 200 bbls. with salt water.
Wheeler et al's No. 1 Webb, 300 ft. from N and 100 ft. E of road, approximately 4,840 ft. from W and 1,920 ft. from N of Hooper Sur. ....Drlg. 2,810 ft.

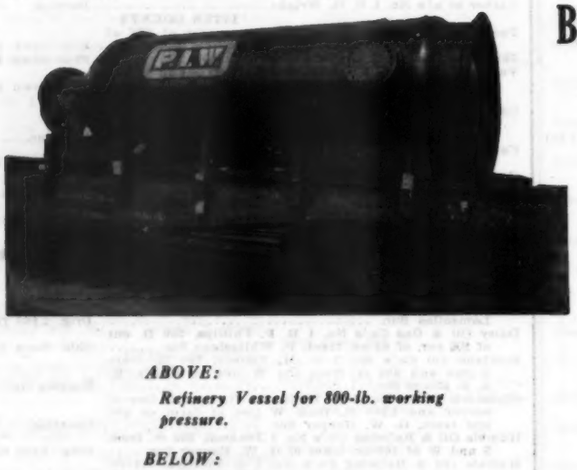
VAN ZANDT COUNTY

Barton et al's No. 1 C. L. Hubbard, 600 ft. out of NE cor. of Hubbard 225-ac. tract, 3½ miles S of Canton, M. J. Cadena Sur. ....Shut down 2,000 ft.
Kelly Oil & Gas Co.'s No. 1 Lemaford, center of Lemaford tract, John Conner Sur. ....Shut down 2,300 ft.
W. P. Palmer et al's No. 2 W. P. Forster, 600 ft. from N and 450 ft. from E of SW cor. of Forster 151-ac. tract in the F. Montgomery Sur. ....Shut down 3,000 ft.
Pure Oil Co.'s No. 4 W. A. York, 890 ft. W of E line and 660 ft. S of N line of W. A. York 50-ac. tract, John Walling Sur. ....Preparing to set csg.
Van Oil Association's No. 1 Tankersley, 300 ft. from E and 1,000 ft. from S of farm, L. Landers Sur. ....Shut down 2,860 ft.

WOOD COUNTY

Brennan and Wood's No. 1 L. W. Mings, 300 ft. from NW cor. of survey and tract, Moses Stripling Sur. ....Derrick.
Wood County Dev. Co.'s No. 1 A. C. Pick, 165 ft. S of NE cor. G. C. Reeves 25-ac. tract, Daniel Fuller Sur. ....Shut down 2,008 ft.

Reaction Chamber
2½" Wall; 10' x 40'



ABOVE:
Refinery Vessel for 800-lb. working pressure.

BELOW:
Fractionating Tower 12' x 79' high with 69 nozzles and fittings.

PROVEN PERFORMANCE BACKS FLUID-FUSION WELDED REFINERY VESSELS

FOR more than 6 years Fluid-Fusion welded refinery vessels have been building an enviable record for safe performance and sustained operation under the severest conditions of pressure, temperature and corrosion.

Serving in various capacities from high pressure reaction chambers to the lighter vessels with multiple nozzles and openings Fluid-Fusion welded vessels have proved their reliability in all the major cracking and distillation processes.

These tried and proven refinery vessels are offered with walls up to 6 inches thick in dimensions set only by railroad limits.

The Petroleum Iron Works Co.

Sharon, Pa.

New York, N. Y. 25 W. 43rd. St.

Brief Items for Petroleum Refiners

D. G. GRAY MANAGER OF WAGGONER REFINING CO.

David G. Gray has resigned as president and general manager of the Dale Oil & Refining Co., Wichita Falls, Tex., to accept the position as manager of the

J. D. Dale

Waggoner Refining Co., Electra, Tex. He took charge of his new work last week.

Mr. Gray has been connected with the oil business in various capacity for the past 16 years. He was manager of the Dale company for six years. Previously he was connected with The Texas Company. The Waggoner company operates a 4,000-bbl. refinery at Electra. Mr. Gray will continue to make his home in Wichita Falls. Headquarters of the company are located at Electra.

Following the resignation of Mr. Gray, John E. Kilgore, attorney of Wichita Falls, was elected president of the Dale company. J. D. Dale, who has been connected with the company for several years, was elected manager.

NOT TO OFFER SECOND GRADE ETHYL GASOLINE

The Ethyl Gasoline Corp. will not at this time make available a second grade of Ethyl Gasoline in United States, according to an official statement received Tuesday by The Oil and Gas Journal from the New York City offices of the corporation.

It has been widely reported in refining and marketing circles for several weeks that the corporation would shortly revise its specifications on the premium grade of Ethyl Gasoline and also establish specifications for a second grade which would be sold as a regular grade by its licensees. It was expected that the antiknock rating of the premium grade would be increased with the rating of the second grade better than the average grade of white motor fuel now being offered.

The corporation recently permitted the Imperial Oil, Ltd., one of its licensees, to use tetraethyl lead in a second grade in order to increase the antiknock rating of its gasoline.

NEW REFINERY COMPLETED

CHATHAM, Ontario, Oct. 10.—Sterling Oil Co. has completed a new 1,200-bbl. refinery at Moose Jaw, Saskatchewan. The plant cost around $185,000 and will operate on Mid-Continent crude.

INTRODUCE PURE HYDROCARBON TO MIX WITH LUBRICATING OIL

NEW YORK, Oct. 10.—Standard Oil Development Co. is introducing to the refining industry of the country a pure hydrocarbon oil known as "Paraflow," the addition of from .25 per cent to 1 per cent of which to the proper grades of motor oils vastly improves their qualities and at the same time eliminates the necessity of expensive dewaxing processes.

In a statement announcing the new product, which is now being made on a commercial scale at the Bayonne plant, and which will be sold to refiners licensed to mix "Paraflow" with motor oils, the company says:

"A pure hydrocarbon oil known as 'Paraflow,' the addition of from .25 per cent to 1 per cent of which to the proper grades of motor oils vastly improves their qualities and at the same time eliminates the necessity of expensive dewaxing processes, has been introduced by the Standard Oil Development Co.

"It has been known for some time that, compared with lubricants containing a certain proportion of paraffin wax, totally dewaxed oils in the crankcase are:

"(a) More viscous or sluggish at low temperatures.

"(b) Thin out more rapidly on heating.

"(c) Are often consumed in larger amounts in motor operation.

"(d) Display a greater tendency to carbonize under fire.

"On the other hand, paraffin wax itself tends to congeal in cold weather. As a consequence the industry has been unable to take advantage of the inherent beneficial effects of the presence of a certain amount of paraffin wax in motor oils.

"It is true that certain foreign substances have been employed to a limited extent to reduce the pourpoint of paraffin oils, but the effect is usually transient and harmful to the oil to the extent of adulteration. Paraflow, on the other hand, is a pure hydrocarbon, which mixes and blends with the lubricating oil in all proportions. Tests have shown it impossible to separate Paraflow from the treated oil by washing with caustic or sulphuric acid. Long storage, either under freezing or high temperature conditions does not injure the stability of the pourpoints of Paraflow-treated oils, nor does it cause any loss in demulsibility.

"What Paraflow does is to permit the use of a partially dewaxed product without danger of the oil losing its fluidity at low temperatures. Specifically, it lowers the pourpoint of the product from 30° F., taking one example of high grade oil, to zero in the treated oil.

"Extensive tests of the new discovery at the company's laboratory give promise of the following:

"(a) The addition of from .25 per cent to 1 per cent of Paraflow renders the best grades of paraffin motor and transmission oils perfectly fluid at temperatures far below the point at which they would in the natural state become too heavy to pour.

"(b) The presence of a certain amount of paraffin wax in the oil, which the addition of Paraflow permits, tends to maintain a more constant temperature-viscosity ratio.

"(c) Also of value in cold weather is the fact that Paraflow speeds up the distribution of the oil from pump to bearings.

"(d) It eliminates the necessity for expensive treating processes for removing excess paraffin wax, thus making it more simple for the refiner, and, on the other hand, enables him to leave in the oil a part of its valuable natural wax content without fear of its congealing.

"A more detailed description of Paraflow, its characteristics, and the result of numerous tests will be given at the annual meeting of the American Petroleum Institute, which begins on November 9, in a paper being prepared by G. H. B. Davis and A. J. Blackwood, of the Standard Oil Development Co.

"Commercial production of the new product has already been started at the Bayonne refinery of the Standard Oil Co. of New Jersey, and a new division of the Standard Oil Development Co., with headquarters in the Durant Building, Elizabeth, N. J., organized to handle its distribution. As rapidly as the present limited supply can be increased, the product will be sold to refiners who will be licensed to mix Paraflow with motor oils."

LARGE UNIT ON SCHEDULE

SAN FRANCISCO, Calif., Oct. 12.—The new 10,000-bbl. Tube and Tank cracking plant of the Associated Oil Co. at Avon has been placed on a regular schedule of operation at capacity. This unit is said to be the largest now operating. It was built by E. B. Badger & Sons Co. and a description of it appeared on page 15 in The Oil and Gas Journal of August 27.

BUILDING LARGE STORAGE

The East Texas Refining Co. is building two Hortonspheriod welded steel tanks at its refinery at Longview, Tex. These tanks are the largest spheroid tanks yet constructed for crude oil and gasoline storage. One will be for crude oil storage, while the other will serve as a gasoline storage tank. Each has a capacity of 80,000 bbls. The tanks will be completed in approximately 45 days.

A. T. LOCKE DIES

CHICAGO, Oct. 13.—A. T. Locke, well known in Chicago oil marketing circles, died from heart attack Monday at Streator, Ill.

TO BUILD SMALL PLANT

A group of operators in Central Kentucky is planning the construction of a small skimming plant to be located at Somerset, Ky. The plant will have a capacity up to 1,000 bbls. daily. The project is being fostered by C. E. Curry of Owensboro, R. C. Snyder of Louisville, H. B. Wood of Lexington and J. A. Barrett of Glasgow. These men have purchased the properties of the Cumberland Pipe Line Co. in the Wayne County district which embraces Wayne, Pulaski and McCreary Counties. The plant will give an outlet for the crude oil produced in the central part of the state which in the past has been provided by the Cumberland pipe line, one of the oldest lines in the state.

COMPLETE SMALL PLANT

The Mountain State Refining Co has completed and is now ready to operate a small skimming plant at Orchard, Colo. The plant has a capacity of 300 bbls. daily. This is the first plant to be built as a result of the discovery of the Greasewood Flats Field. The gasoline will be sold to dealers in northeastern Colorado.

IMPORTANT CHANGES AT STANDARD LIMA PLANT

LIMA, Ohio, Oct. 10.—Major improvements will be made at the local refinery of the Solar Refining Co. during the next few months, according to an announcement here by W. T. Holliday, president of the Standard Oil Co. of Ohio, Cleveland. The Solar plant, which was one of the first refineries to be built in Ohio, has been acquired through merger by the Ohio Standard.

It is understood that the refinery will be remodeled so that it will be similar in manufacturing facilities to the plants of the Standard located at Cleveland and Toledo and the Latonia, Ky., refinery of the Latonia Refining Corp., which is a 100 per cent subsidiary of the Standard company. The Standard of Ohio has made a specialty of refining gasolines which are exceptionally high in antiknock properties. In order to manufacture this gasoline, it will be necessary to install additional high pressure equipment at the local refinery. No additional employes will be needed in the construction work, it is announced.

Only minor changes have been made in the facilities of the local refinery over the past three years. The plant has a rated crude oil capacity of 18,000 bbls. daily. It has operated only a fraction of its total capacity during the past year. The plant equipment includes Cross and Burton cracking units with a total capacity of 8,000 bbls. daily. The refinery also has facilities for the manufacture of lubricating oils. The lub plant has not been operated for some time.

It was also announced that within 60 days the refinery would be in a position to refine approximately 1,000 bbls. of crude oil from the old Lima Field. This field has not had a regular outlet. The plant will also refine 6,000 bbls. daily of crude oil brought to the plant from the Illinois fields by pipe lines.

MOSSMAN SUPERINTENDENT

R. E. Mossman has been named as superintendent of the West Tulsa refinery of The Texas Company to succeed P. L. Drake who passed away one month ago. Mr. Mossman has been superintendent of the company's plant at Dallas, Tex. Having entered the employ of the company in 1916, his first refinery experience was gained at the Port Arthur, Tex., plant. He was then transferred to the Casper plant as superintendent. He was next placed in charge of the operations of the Dallas plant where he has ben for the past two years.

START ISLAND PLANT

PORT CLINTON, Ohio, Oct. 10.—Manufacture of gasoline has been started at the refinery of the Peninsula Oil Co. of Catawba Island, near here, where the company has 11 wells. The company also has holdings near Bowling Green, in Wood County, Ohio.

Officials of the company said the refinery will have an initial production of 25 bbls. of gasoline a day which it plans to sell to the public at the plant at 12 cents a gallon. It also will have storage facilities for 2,000 gallons of gasoline, 2,000 gallons of fuel oil and 1,000 gallons of kerosene.

MAY ENLARGE CRACKING

The Crown Central Refining Co., Houston, Tex., has proposed the construction of two 4,500-bbl. cracking units and one 5,000-bbl. lub unit at its Houston refinery. Daily crude capacity of the present plant is around 13,000 bbls. Daily cracking capacity of the plant is 8,000 bbls.

Manufacture of Natural Gasoline

Numerous Angles To Accounting at Gasoline Plants

The Rooster
Standard Gasoline Co.

Personnel maintained by the Standard Gasoline Co. to render accounting service is divided among field and home office units. For its figures, the home office is mainly dependent upon what takes place in the field as shown upon records and reports prepared and submitted by field employes. Therefore, it is quite apparent that field accounting is of primary and fundamental importance.

The organization within each division office differs, depending upon the size and volume of the work. Every effort, however, is made to employ uniform methods, forms and reports throughout the entire company; the object, of course, being to provide a consistent treatment by all three divisions of facts and figures continually being prepared for the managers.

Various phases of field practice, together with their respective accounting procedures as discussed in the following paragraphs furnish an operating picture to the management which is clear without being highly complicated.

As the company's function is the economical production of gasoline, the delivery of and accounting for materials necessary for the maintenance and efficient operation of plants is of prime importance. All material orders constitute requisitions on the storehouse and upon delivery of the supplies the receiver receipts for them by signing one copy of the requisition, thereby showing that the transfer has been properly completed. This receipted copy is then priced by the materials department and forwarded to us to serve as a combined bill and receipt.

At the end of each month the materials department charges our company with the total of all the invoices covering materials ordered by the various divisions during that month. By means of

(Continued on Page 102)

COMPLETE NEW HUMBLE PLANTS IN EAST TEXAS

The new combination repressuring and gasoline plants of the Humble Oil & Refining Co., located in East Texas, are expected to be completed this week and will start operating immediately. The London plant, which is located in Rusk County, will have a capacity of 65,000 gallons and the Kilgore plant in Gregg County has a rated capacity in the natural gasoline end of 32,500 gallons.

The initial capacity of the plants will be less than the maximum capacity. The two plants are the first to be built in the new East Texas fields.

The Humble company during the past few months has shut down three of its plants located in other Texas fields. The plants in Navarro County, near Corsicana, and in Caldwell County, near Luling, have been shut down and abandoned. Part of the equipment has been used in the construction of the East Texas plants. The Navarro County plant had a capacity of 20,000 gallons daily and that in Caldwell County 12,000 gallons.

The Humble also has shut down temporarily its plant located in Pecos County, near Iraan. This plant, which is one of the two plants in West Texas fields, had a rated capacity of 25,000 gallons.

The following plants of the Humble company, all located in Texas, are operating: Rising Star, Brown County, 12,000 gallons; Jacksonville, Anderson County, 20,000 gallons, and Bellville, Austin County, 12,000 gallons.

METHOD OF CALCULATING DATA IN HYDROGEN SULPHIDE TESTS

All analyses of natural gas were made at the well head, thus obviating irregularities in the analytical results due to the transporting of samples. In this connection, false samples may result from the interaction of the "sour" gas and the interior walls of the gas container, if an attempt is made to transport samples in steel receptacles; also, in any kind of container, partial removal of hydrogen sulphide from the sample may occur by auto-oxidation, especially if condensed moisture is present.[1]

The Tutweiler apparatus, a full description of which is given elsewhere,[2]

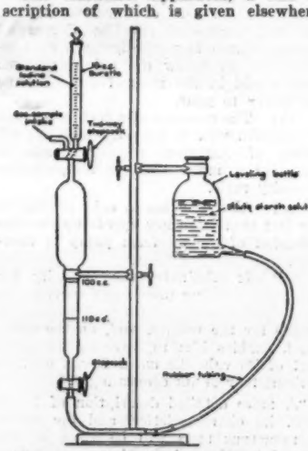


Figure 1. Tutweiler apparatus for determination of the hydrogen sulphide content of gas.

was employed in making the tests. The quantitative reaction inherent to this apparatus, which involves a direct titration of iodine solution against the contained hydrogen sulphide, has been reported by Jordan and Fulweiler to give high results in certain cases, due to the reaction between iodine and unsaturated hydrocarbons. For the analysis reported in this paper, however, the method is assumed to be entirely adequate because unsaturates of the type investigated by Jordan and Fulweiler[3] were absent from gases studied by the writers.

A sketch of the Tutweiler apparatus is given in Figure 1. The sample is drawn into the apparatus directly from the sampling point, thus obviating sampling containers. By manipulation of the leveling bottle, the volume of the sample can be adjusted to exactly 100 c.c. at the existing atmospheric temperature and barometric pressure. Thereupon standard iodine solution is admitted into the gas chamber, intermittently with vigorous shaking, until a permanent blue coloration persists in the residual starch solution in the bottom of the apparatus. The volume of standard iodine solution consumed in the reaction is a measure of the hydrogen-sulphide content of the gas. The equation for the reaction is:

$$H_2S + I_2 = 2HI + S$$

The strength of standard iodine solution to be used in the apparatus is dependent upon the quantity of hydrogen sulphide present in the gas under investigation. For gases containing 1 per cent by volume or less of hydrogen sulphide, normal/100 iodine solution may be used; when the quantity of hydrogen sulphide is above 1 per cent, normal/10 iodine solution is suitable.

The Tutweiler apparatus is capable of giving accurate results on gas of 0.02 per cent hydrogen-sulphide content (13 grains per 100 cubic feet) upward to any probable concentration encountered.

Calculation of Results

The value of standard iodine solution in terms of hydrogen sulphide is:

1 c.c. of normal/10 iodine solution = 1.118 c.c. of hydrogen sulphide gas (measured at 32° F. under a pressure of 29.92 inches of mercury);

1 c.c. of normal/100 iodine solution = 0.1118 c.c. of hydrogen sulphide gas (measured at 32° F. under a pressure of 29.92 inches of mercury).

For calculation of results, the following formulas are applicable (for the Tutweiler apparatus):

(1) Cases in which normal/10 iodine solution is used:

$$\text{Per cent of } H_2S \text{ in gas} = \frac{\text{Observed absolute temperature}}{273} \times \frac{\text{Observed barometric pressure in inches of mercury}}{29.92} \times 1.118 \times \text{no. c.c. of N/10 iodine used.}$$

(2) Cases in which N/100 iodine solution is used:

$$\text{Per cent of } H_2S \text{ in gas} = \frac{\text{Observed absolute temperature}}{273} \times \frac{\text{Observed barometric pressure in inches of mercury}}{29.92} \times 0.1118 \times \text{no. c.c. of N/100 iodine used.}$$

The method of calculation is illustrated in the following sample computation:

Iodine solution used.....14.8 c.c. N/10.
Atmospheric temperature..62°F. (17°C.)
Atmosph. pressure, 27.48 ins. of mercury.

$$\text{Per cent of } H_2S \text{ in gas} = \frac{273+17}{273} \times \frac{29.92}{27.48} \times 1.118 \times 14.8 = 19.14$$

[1] Heath, F. H., Lee, F. A., Errors in the Determination of Hydrogen Sulphide; Jour. Am. Chem. Soc., vol 45, July, 1923, p. 1643.

[2] Tutweiler, C. C., The Quantitative Estimation of Hydrogen Sulphide in Illuminating Gas; Jour. Am. Chem. Soc., vol. 23, 1901, p. 173. American Gas Chemists Handbook, Chemical Publishing Co., 3rd ed., 1929, p. 462.

[3] Jordan, C. W., Fulweiler, W. H., Determination of Hydrogen Sulphide in Illuminating Gas; Am. Gas Jour., vol. 115, Dec. 10, 1921, p. 528.

COMPLETES McCAMEY LINE

The Phillips Petroleum Co. has completed the 23-mile gasoline line from its natural gasoline plant in the Church-Field Pool in McCamey County of West Texas to new load racks on the Santa Fe Railroad at McCamey, Tex. Previous to the building of this line all of the natural gasoline production of the plant was turned into the crude line of the Humble Oil & Refining Co. for transportation and recovery at the Humble refineries.

MOVE WYOMING PLANT

The Producers & Refiners Corp. is moving its gasoline plant from near Casper, Wyo., to the Lost Soldier Field in Carbon County, Wyoming. The plant was built a number of years ago and supplied a part of the needs of the company's refinery at Casper. It has a capacity of 8,000 gallons daily.

At the new location the plant will process gas now being supplied to Rawlins. This gas has not been processed through a gasoline plant up to this time.

MAGNOLIA COMPANY OPERATING 20 PLANTS

The Magnolia Petroleum Co., one of the largest natural gasoline plant operators in the Mid-Continent Field, now has 20 plants operating, according to a check completed last week. These plants have a capacity of 115,950 gallons daily.

During the past two months the company shut down two plants. One of the plants was located near Healdton, Okla., in the SW NW NE, Section 15-4s-3w, Carter County, Oklahoma. The plant has a capacity of 1,750 gallons daily. The other plant was located in the SE, Section 13 LAL, Stephens County, near Breckenridge, Tex. The plant has a capacity of 6,250 gallons.

The following report gives the location and capacity of the Magnolia plants as of October 1:

	Gallons
NE SW Sec. 6-19n-6e, Payne Co., Okla.	4,500
NE Sec. 7-18n-7e, Creek Co., Okla. ..	9,500
SW Sec. 3-16n-7e, Creek Co., Okla. ..	8,250
SW Sec. 34-15n-5e, Lincoln Co., Okla.	3,750
NE NW SE Sec. 10-9n-5e, Seminole Co., Okla.	6,000
NW SW SE, Sec. 15-7n-4e, Pottawatomie Co., Okla.	13,000
W 7.65 ac., Lot 4, Sec. 32-8n-3e, Seminole Co., Okla.	5,750
NW NW Sec. 19-1s-3w, Stephens Co., Okla.	600
SE SE SE Sec. 23-2s-3w, Carter Co., Okla.	5,000
J. G. Hardin farm, 1 mi. NNW Burkburnett, Wichita Co., Texas	4,250
Sec. 17, Blk. 13, H.&T.C. Ry Sur., Wilbarger Co., Texas	4,500
R. S. Harris farm, Matt Finch Sur., Eastland Co., Texas	9,000
Caruth farm, Smelser Sur., Eastland Co., Texas	7,500
Sec. 12-12-11, Red River Parish, La.	1,500
Sec. 24-21n-15w, Caddo Parish, La. ..	1,300
Sec. 8-15-16, Union Co., Ark.	6,800
NE Sec. 52, Blk. 3, I.&G.N. Ry. Sur., Gray Co., Texas	4,250
Sec. 30, Blk. B-2, H.&G.N. Ry. Sur., Gray Co., Texas	15,000
Sec. 91, Blk. 4, I.&G.N. Ry. Sur., Carson Co., Texas	3,500
NE Sec. 39, Blk. 24, H.&G.N. Ry. Sur., Wheeler Co., Texas	2,000

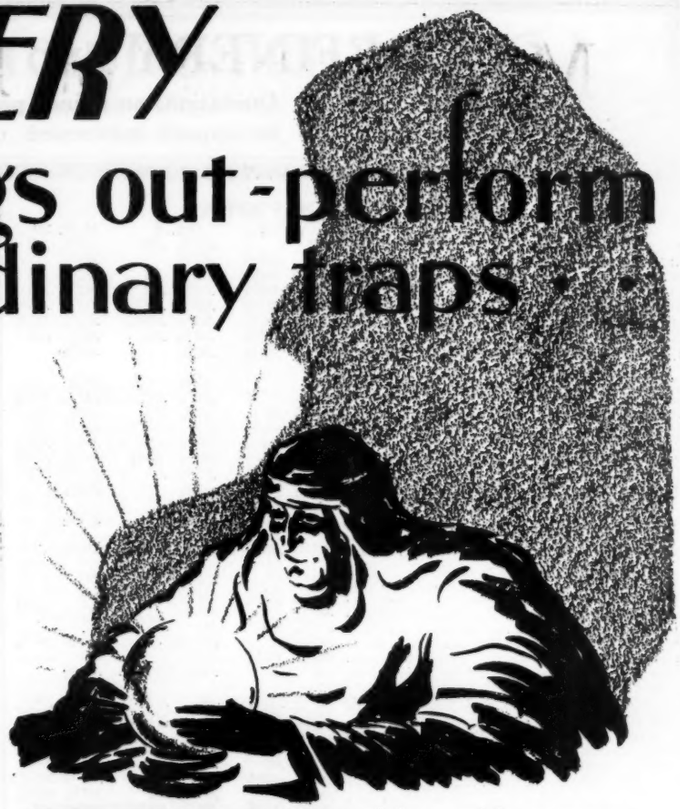
DELAY BUILDING OF EAST TEXAS PLANTS

The building of gasoline plants in East Texas has been temporarily delayed due to operators of gasoline plants not being in accord with some of the demands made by the operators in the district. Most of the trouble pertains to the repressuring of the leases, the gasoline plant companies stating that they cannot carry out all terms which the operators desire in conjunction with connecting to their wells to obtain gas, and also for the returning of residue gas to the wells for repressuring work. The Stanolind Oil & Gas Co. and Roeser & Pendleton, Inc., two companies which have considered building plants in the Lathrop area, Gregg County, are withholding the construction of these plants for the time being. The former company is to build a new plant throughout, while the latter company is to dismantle its plant in the Cook Pool, Shackelford County, West Central Texas, and move to the East Texas district.

Another meeting of operators, and those proposing the construction of gasoline plants in the district, was held in Dallas this week, resulting in the accomplishment of but little more than during the past week's meeting. Another meeting will be held this week in an effort to iron out difficulties and reach some agreement. As soon as all problems are ironed out, there will no doubt be two or three companies to start immediate construction on such plants. The gas-oil ratio was held to 500-1 by the Railroad Commission when it issued the new order curtailing production to 165 bbls. per well which went into effect today.

NO MYSTERY

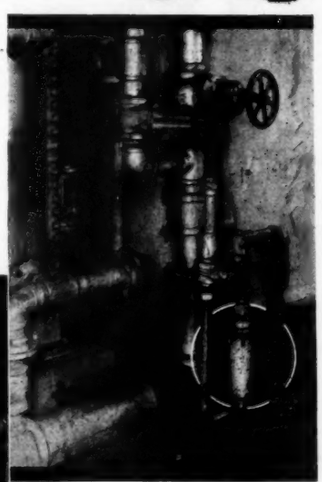
Why Armstrongs out-perform *and* out-last ordinary traps . . .



THE high performance standards and long life of Armstrong inverted bucket traps are easily explained. The simple, obvious answer lies in their design and construction which provide, not only one or even several, but *every* feature essential to efficient and trouble-free trapping.

Armstrong design—embodying the pioneer and now practically standard inverted bucket principle—is the result of over 20 years' specialized experience in building separating traps. From this unequaled background have been developed and perfected the Armstrong features which assure outstanding durability and performance.

The Armstrong design offers positive protection against air-binding, clogging and steam leakage. The traps cannot air-bind because they pass air immediately as well as water. They do not clog because the upward swirling flow of condensate carries out all scum and sediment. Wire-drawing is eliminated by chrome steel valves plus valve action which is either wide open or tightly closed. Armstrong traps are small enough to be supported by connecting pipes, yet have greater capacity than most traps of much larger size.



Armstrong trap on reflux towers in natural gasoline plant.

Write for as many traps as desired for 90 days' free trial, giving pressures, pipe sizes, services, etc. Return the traps collect after the trial period.

Trapping the lines to the reboiler in a mid-continent gasoline plant.

ARMSTRONG "INVERTED BUCKET" STEAM TRAP

Armstrong Machine Works

868 Maple Street - Three Rivers, Michigan

Stocks in all principal cities

OGJ 10-15 Gray

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

GASOLINE AND NAPHTHA

	Oct. 13		Oct. 6		Sept. 29	
OKLAHOMA (Group 3)—						
50-52 450 endpoint	.03		.02¾	.03	.02¾	.03
56-58 450 endpoint	.03	.03¼	.02¾		.02¾	
58-60 437 endpoint (U. S. Motor)	.03⅜	.03⅜	.02⅞	.03	.02⅞	.03
60-62 437 endpoint	.03⅜	.03⅜	.02⅞	.03	.02⅞	.03
60-62 400 endpoint	.03⅜	.03¾	.03	.03⅜	.03	.03½
64-66 375 endpoint	.04¼	.04½	.03¼	.03¾	.03¼	.03¾
68-70 360 endpoint	.04⅜	.04⅝	.03½	.04	.03½	.04
64-66 437 endpoint (blend)	.03	.03¼	.02¾		.02¾	
NORTH TEXAS—						
50-52 450 endpoint	.03		.02¾		.02¾	
58-60 450 endpoint	.03	.03¼	.02⅝	.02¾	.02⅝	.02¾
58-60 437 endpoint (U. S. Motor)	.03¼	.03½	.02¾	.03	.02¾	.03
60-62 400 endpoint	.03½	.03⅝	.03	.03⅜	.02⅞	.03
64-66 390 endpoint	.04	.04⅛	.03⅛	.03½	.03⅛	.03½
64-66 375 endpoint	.04¼	.04½	.03¼	.03¾	.03¼	.03¾
68-70 360 endpoint	.04⅜	.04⅝	.03½	.04	.03½	.04
64-66 437 endpoint (blend)	.03¼		.02¾		.02¾	
***NORTH LOUISIANA**						
58-60 437 endpoint (U. S. Motor)	.03⅜	.03½	.03¼		.03½	
***ARKANSAS—**						
58-60 437 endpoint (U. S. Motor)	.03⅜	.03½	.03¼		.03½	
PENNSYLVANIA—						
52-54 Naphtha	.04½		.04⅞		.05	
54-56 Naphtha	.04½	.04¾	.04⅞	.05	.05	
58-60 Gasoline	.04¾		.05		.05¼	.05⅜
60 Gasoline	.04¾	.05	.05	.05¼	.05⅜	
62 Gasoline	.05		.05½		.05⅜	.05½
64 Gasoline	.05¼	.05½	.05⅜		.06	
68-70 350 endpoint gasoline	.06		.06¼		.06½	
CALIFORNIA—						
†54-58 437 endpoint (U. S. Motor) domestic	.05⅜	.06¾	.06	.07	.05½	.06½
58-60 400 endpoint domestic gasoline	.06¼	.07¼	.06¼	.07¼	.05¾	.06¾
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 endpoint (Naphtha)	.03	.03⅛	.02¼	.02½	.02½	.02¾
58-60 437 erdpoint (U. S. Motor)	.02¾	.03	.02½	.02¾	.02½	.03
60-62 400 endpoint	.03¼	.03½	.02¾	.03⅛	.02⅝	.03¼
64-66 375 endpoint	.04	.04¼	.03½	.04	.03⅛	.03½
68-70 360 endpoint	.04⅛	.04¼	.03½	.04⅛	.03⅝	.04
64-66 437 endpoint (blend)	.02¾	.03	.02⅝	.02¾	.02½	.03
GULF COAST (Export)—						
58-60 U. S. Motor	.03½	.04	.04	.04¼	.04	.04¼
60-62 400 endpoint	.04¼		.04¼	.04½	.04¼	.04½
61-63 390 endpoint	.04¼		.04½	.04¾	.04½	.04¾
64-66 375 endpoint	.04½		.04½	.04¾	.04½	.04¾

*Louisiana, Arkansas and Mississippi delivery. †For Pacific Coast consumption.

NATURAL GASOLINE

	Oct. 13		Oct. 6		Sept. 29	
OKLAHOMA (Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.04¼		.04¼		04	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.04¼		.04	.04¼	.04	
Grade B, 76-83.9, 375 e.p., rec. 85%	.04¼		.04	.04¼	.04	
Grade BB, 84-92, 375 e.p., rec. 85%	.04¼		.04	.04¼	.04	
Grade C, 80-92, 375 e.p., rec. 78%	.04¼		.04¼		.04	
NORTH TEXAS—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.04		.04		.03¾	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.04		.03¾	.04	.03¾	
Grade B, 76-83.9, 375 e.p., rec. 85%	.04		.03¾	.04	.03¾	
Grade BB, 84-92, 375 ep., rec. 85%	.04		.03¾	.04	.03¾	
Grade C, 80-92, 375 e.p., rec. 78%	.04		.03¾	.04	.03¾	
NORTH LOUISIANA—						
Grade AA, 80-87, 375 e.p., rec. 90%	.04⅛		.04		.04	
Grade BB, 84-92, 375 e.p., rec. 85%	.04⅛		.04		.04	
Grade C, 80-92, 375 e.p., rec. 78%	.04⅛		.04		.04	
CALIFORNIA—						
75-78 375-390 endpoint	.04½	.05½	.04½	.05½	.04½	.05½
CHICAGO DISTRICT (Based on Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.04¼		.04		.04	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.04¼		.04		.04	
Grade BB, 84-92, 375 e.p., rec. 85%	.04¼		.04		.04	

BURNING OIL

	Oct. 13		Oct. 6		Sept. 29	
OKLAHOMA (Group 3)—						
41-43 water white kerosene	.01⅞	.02	.01⅞	.02	.01⅞	.02
42-44 water white kerosene	.02⅛	.02¼	.02⅛	.02¼	.02⅛	.02¼
NORTH TEXAS—						
41-43 water white kerosene	.01⅞	.02	.01⅞	.02	.01⅞	.02
40-41 water white kerosene	.01⅞		.01¾	.01⅞	.01¾	.01⅞
***NORTH LOUISIANA—**						
41-43 water white kerosene	.02¼	.02½	.02¼		.02¼	
***ARKANSAS—**						
41-43 water white kerosene	.02¼	.02½	.02¼		.02¼	
PENSYLVANIA—						
43 Kerosene prime white	.03⅜		.03⅜		.03⅝	
45 Kerosene water white	.03½		.03½		.03½	
46 Kerosene water white	.03⅞		.03⅞		.03⅞	
CALIFORNIA—						
38-40 water white Kero. (high burning test)	.04	.05	.04	.05	.04	.05
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white kerosene	.02	.02¼	.01⅞	.02½	.01¾	.01⅞
42-44 water white kerosene	.02¼	.02⅝	.02	.02¼	.01⅞	.02
GULF COAST (Export)—						
41-43 prime white	.03½		.03½		.03½	
44 prime white	.03½	.03¾	.03½	.03¾	.03½	.03¾

*Louisiana, Arkansas, Mississippi and East Texas delivery.

FUEL OIL

	Oct. 13		Oct. 6		Sept. 29	
OKLAHOMA (Group 3)—						
Below 18 gravity Fuel Oil, per bbl.	.25	.30	.25	.30	.22½	.27½
18-22 Fuel Oil, per bbl.	.27½	.35	.27½	.35	.25	.30
20-22 Fuel Oil, per bbl.	.27½	.35	.27½	.35	.25	.30
22-26 Fuel Oil, per bbl.	.30	.37½	.30	.37½	.27½	.32½
24-26 Fuel Oil, per bbl.	.35	.40	.35	.40	.32½	.37½
26-30 Fuel Oil, per bbl.	.42½	.47½	.42½	.47½	.40	.45
28-30 Fuel Oil, per bbl.	.45	.50	.42½	.47½	.40	.45
32-36 Gas Oil (industrial)	.01¼	.01½	.01⅛	.01¼	.01⅛	.01¼
32-36 Gas Oil (straw color, high cold test)	.01¼	.01½	.01⅛	.01¼	.01⅛	.01¼
*32-36 Gas Oil (straw color, low cold test)	.01⅜	.01½	.01¼	.01⅜	.01¼	.01⅜
36-38 Distillate	.01½	.01⅝	.01⅜	.01½	.01⅜	.01½
38-40 Straw Distillate	.01½	.01⅝	.01⅜	.01⅝	.01⅜	.01⅝

*32-36 Gas Oil (straw color, low cold test) was incorrectly quoted for October 6 and Sept. 29. The correct prices are shown above.

Note—Fuel oils over 40 cold test generally 5 to 10 cents per barrel less.

NORTH TEXAS—						
Below 20 gravity Fuel Oil, per bbl.	.25	.30	.25	.30	.20	.25
24-26 Fuel Oil, per bbl.	.30	.35	.30	.35	.25	.30
32-36 Gas Oil (industrial)	.01⅛	.01¼	.01	.01⅛	.00⅞	.01
38-40 Straw Distillate	.01½	.01⅝	.01⅜	.01½	.01¼	.01⅜
***NORTH LOUISIANA—**						
18-20 Fuel Oil, per bbl.	.40	.50	.40	.50	.45	.55
30-32 Gas Oil (low cold test)	.01½	.01¾	.01½	.01⅝	.01½	.01¾
***ARKANSAS—**						
33-36 Distillate	.01¾	.02	.01¾	.02	.01¾	.02
30-32 Gas Oil	.01½	.01¾	.01½	.01¾	.01½	.01¾
16-22 Refinery Fuel Oil, per bbl.	.35	.50	.35	.50	.45	.50
GULF COAST (South Texas)—						
Gas Oil	.02¼	.02½	.02¼	.02½	.02¼	.02½
Bunker C Fuel (cargo lots), per bbl.	.40	.45	.40	.45	.43	.48
Bunker C Fuel (small lots)	.55		.55		.55	
PENNSYLVANIA—						
30-34 Fuel Oil	.02¾	.03	.02¾	.03	.02¾	.03
36-40 Gas Oil	.03		.03		.03	
CALIFORNIA—						
42-45 480 endpoint engine distillate	.06½	.07½	.06½	.07½	.05½	.07
15-19 Fuel Oil, Bunker (at tidewater), bbl.	.60	.80	.60	.80	.60	.80
15-19 Fuel Oil (cargo lots, at tidewater), bbl.	.55	.75	.55	.75	.55	.75
†15-19 Fuel Oil (f.o.b. tank cars), bbl.	.45	.75	.45	.75	.45	.75
27 plus Diesel, per bbl.	.80	.95	.80	.95	.75	.95
30-34 Gas Oil	.80	.95	.80	.95	.75	.95
CHICAGO DISTRICT (Based on Group 3)—						
18-22 Fuel Oil, per bbl.	.30	.35	.27½	.30	.27½	.30
22-26 Fuel Oil, per bbl.	.32½	.40	.27½	.35	.27½	.32½
28-30 Fuel Oil, per bbl. (zero)	.47½	.52½	.45	.50	.45	.47½
32-36 Gas Oil (industrial)	.01½		.01⅛	.01¼	.01⅛	.01¼
32-36 Gas Oil (zero)	.01⅝		.01¼	.01½	.01¼	.01½
38-40 Straw Distillate	.01¾		.01⅝	.01⅝	.01⅝	.01⅝

*Louisiana, Arkansas, Mississippi and East Texas delivery. †Lowest priced fuel oil has high sulphur content.

LUBRICATING OIL AND WAX

	Oct. 13		Oct. 6		Sept. 29	
OKLAHOMA (Group 3)—						
100 vis., 2 color, 20-25 cold test	.04½	.04¾	.04½	.04¾	.04½	.04¾
100 vis., 3 color, 20-25 cold test	.04	.04½	.04	.04½	.04	.04½
150 vis., 3 color, 20-25 cold test	.06¾	.07¼	.06¾	.07¼	.06¾	.07¼
150 vis., 4 color, 20-25 cold test	.06¼	.06½	.06¼	.06½	.06¼	.06½
180 vis., 3 color, 23-28 cold test	.08¼	.08¾	.08¼	.08¾	.08¼	.08¾
180 vis., 4 color, 23-28 cold test	.07¾	.08¼	.07¾	.08¼	.07¾	.08¼
180 vis., 5 color, 23-28 cold test	.07¼	.07½	.07¼	.07½	.07¼	.07½
200 vis., 3 color, 23-28 cold test	.09½	.10	.09½	.10	.09½	.10
200 vis., 4 color, 23-28 cold test	.09	.09½	.09	.09½	.09	.09½
200 vis., 5 color, 23-28 cold test	.08¼	.08½	.08¼	.08½	.08¼	.08½
240 vis., 3 color, 25-30 cold test	.11	.11¼	.11	.11¼	.11	.11¼
240 vis., 4 color, 25-30 cold test	.10¼	.10¾	.10¼	.10¾	.10¼	.10¾
240 vis., 5 color, 25-30 cold test	.09¾	.10	.09¾	.10	.09¾	.10
280 vis., 3 color, 25-30 cold test	.12½	.13	.12½	.13	.12½	.13
280 vis., 4 color, 25-30 cold test	.11½	.12	.11½	.12	.11½	.12
280 vis., 5 color, 25-30 cold test	.10¾	.11	.10¾	.11	.10¾	.11
Cylinder Stocks:						
600, steam refined, light green	.04½	.06	.04½	.06	.04½	.06
600, steam refined, dark green	.04	.05	.04	.05	.04	.05
190-200 vis., D color, Bright Stocks	.21	.22	.21	.22	.21	.22
150-160 vis., D color, Bright Stocks 0-10 c.t.	.19½	.20	.19½	.20	.19½	.20
150-160 vis., D color, Bright Stocks 10-25 c.t.	.19½		.19½		.19½	
150-160 vis., D color, Bright Stocks 25-40 c.t.	.19		.19		.19	
150-160 vis., E color, Bright Stocks	.18½	.19	.18½	.19	.18½	.19
Waxes:						
124-126 White Crude Scale Wax	.01⅝	.01⅞	.01⅝	.01⅞	.01⅝	.01⅞

All bright stock prices are for domestic movement.

PENNSYLVANIA—						
34 Neutral	.05½		.05½		.05½	
34 Sundebloom	.05	.05½	.05	.05½	.05	.05½
36 Miners' Neutral	.05½		.05½		.05½	
150, 3 color	.17	.17½	.17	.17½	.17	.17½
180, 3 color	.18½	.19	.18½	.19	.18½	.19
200, 3 color	.21	.21½	.21	.21½	.21	.21½
220, 3 color	.22	.26½	.22	.26½	.22	.26½
600, steam refined	.14	.14½	.14	.14½	.14	.14½
650, steam refined	.17½	.18	.17½	.18	.17½	.18
600, Pennsylvania Flash	.18½	.19	.18½	.19	.18½	.19
600, E filtered	.18		.18		.18	
600, D filtered, Oil City	.22½	.23½	.22½	.23½	.22½	.23½
Pennsylvania Bright Stocks below 35 c.t.	.27	.27½	.28		.29	
Pennsylvania Bright Stocks above 35 c.t.	.27		.27½		.28½	.29
*122-124 White Crude Scale Wax	.02		.02		.019	.02
*124-126 White Crude Scale Wax	.02		.02		.019	

*At New York.

GULF COAST (South Texas)—						
100 vis., 2-2½ color, pale oil	.05½	.05¾	.05½	.05¾	.05½	.05¾
200 vis., 3 color, pale oil	.07½	.07⅝	.07½	.07⅝	.07½	.07⅝
300 vis., 3 color, pale oil	.08¾	.08⅞	.08¾	.08⅞	.08¾	.08⅞
500 vis., 3½ color, pale oil	.09⅞	.10¼	.09⅞	.10¼	.09⅞	.10⅜
750 vis., 3½ color, pale oil	.11⅜	.11⅞	.11⅜	.11⅞	.11⅜	.11⅞
1,200 vis., 3½ color, pale oil	.13⅞	.14⅜	.13⅞	.14⅜	.13⅞	.14⅜
2,000 vis., 4 color, pale oil	.14⅞	.15⅜	.14⅞	.15⅜	.14⅞	.15⅜
200 vis., 5-6 color, red oil	.06¾	.06⅞	.06¾	.06⅞	.06¾	.06⅞
300 vis., 5-6 color, red oil	.07⅞	.08⅜	.07⅞	.08⅜	.07⅞	.08⅜
500 vis., 5-6 color, red oil	.09½	.09⅝	.09½	.09⅝	.09½	.09⅝
1,200 vis., 5-6 color, red oil	.12⅞	.13⅜	.12⅞	.13⅜	.12⅞	.13⅜
2,000 vis., 6 plus color	.14⅞	.15⅜	.14⅞	.15⅜	.14⅞	.15⅜

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

CALIFORNIA—						
130 vis., 2½-3 color	.08¼	.08¾	.08	.08½	.08	.08½
200 vis., 2½-3 color	.09¼	.10¼	.09	.10	.09	.10
300 vis., 3-3½ color	.10¼	.11¼	.10	.11	.10	.11
350 vis., 3½-4 color	.11¼	.12	.11	.12	.11	.12
450 vis., 3½-4 color	.12	.12¾	.12	.12½	.12	.12½
550 vis., 3½-4 color	.12¾	.13¼	.12½	.13¼	.12½	.13¼
Red Neutral:						
200 vis., 4½-5 color	.09¾	.10¼	.09½	.10	.09½	.10
300 vis., 5-6 color	.10½	.11	.10¼	.10¾	.10¼	.10¾
500 vis., 4½-5 color	.12¾	.13½	.12¼	.13	.12¼	.13
600 vis., 6½ plus color	.13½	.14½	.13	.13½	.13	.13½
700 vis., 6½ plus color	.14½	.15¼	.14	.15	.14	.15

Note—Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) EXPORT PRICES

	Oct. 13		Oct. 6		Sept. 29	
Gasoline, U. S. Motor, 58-60, 437 e.p.	.05¼	.06¼	.05¼	.06¼	.06	.06¼
Kerosene, water white, 41-43	.05		.05		.05	
*Fuel Oil, Bunker "C," 41-43	.70		.70		.70	
†Fuel Oil, Diesel, 28-30, per bbl.	1.40		1.40		1.40	
Gas Oil, 28 gravity plus	.04		.04		.04	
25 pale Paraffin Oil, tank car	.10⅛		.10¼		.10¼	
28 pale Paraffin Oil, tank car	.07¼		.07¼		.07¼	
280 red Paraffin Oil, tank car	.12½		.12½		.12½	
250 red Paraffin Oil, tank car	.11½		.11½		.11½	
225 red Paraffin Oil, tank car	.10		.10		.10	
200 red Paraffin Oil, tank car	.09¼		.09¼		.09¼	
Domestic heating oil, min. 32 grav., tank car	.03½		.03½		.03½	
Refined Wax:						
120-122 a.m.p., per lb.	.02⅞		.02⅞		.02⅞	
125-127 a.m.p., per lb.	.03		.03		.03	
130-132 a.m.p., per lb.	.03½		.03½		.03½	
133-135 a.m.p., per lb.	.04		.04		.04	
135-137 a.m.p., per lb.	.04½		.04½		.04½	
Petrolatum in barrels in carload lots, per pound:						
Dark Green	.01¾		.01¾		.01¾	
Amber	.02½		.02½		.02¾	
Extra Amber	.03		.03		.03	
Cream	.05½		.05½		.05¾	
Lily White	.06½		.06½		.05⅝	
Snow White	.07		.07		.07¼	

*Lighterage 5 cents a barrel extra. †Lighterage 6.5 cents a barrel.

NEW YORK (BAYONNE) REFINERY PRICES

	Oct. 13		Oct. 6		Sept. 29	
600, steam refined cylinder stocks, in bbl.	.22	.22½	.21	.22	.20	.20½
635, steam refined	.23½	.24	.23	.24	.22	.23
650, steam refined	.25	.25½	.24½	.25	.23	.24
600, Pennsylvania Flash	.26	.27	.26	.27	.25	.26
630, Pennsylvania Flash	.30	.31	.30	.31	.29½	.30
600, Warren E	.25	.26	.25	.26	.24½	.25
600, Oil City E	.24	.25	.24	.25	.23½	.24
Light 140-150 Bright Stocks	.35	.36	.35	.36	.33	.34
Dark 140-150 Bright Stocks	.34	.35	.34	.35	.32	.33

LOS ANGELES EXPORT PRICES

	Oct. 13		Oct. 6		Sept. 29	
Kerosene, water white	.04	.04¾	.04	.04¾	.04	.04¾
U. S. Motor gasoline, 53-55 437 e.p.	.04¼	.05	.04¼	.05	.04¼	.05
58-60, 400 endpoint gasoline	.04¾	.05½	.04¾	.05½	.04¾	.05½

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

East Texas† ..... $ .68
Corsicana heavy (Aug. 22, 1931)† ..... .34
Other fields ..... See gravity table

†Posted by Panola Pipe Line Co. Aug. 17, 1931; by Magnolia Petroleum Co., Aug. 22, 1931; Tidal Refining Co., Sept. 2; Gulf Pipe Line Co., Sept. 3; Sinclair Refining Co., Sept. 3.

Note—Humble Oil & Refining Co. and Stanolind Crude Oil Purchasing Co. also pay 68 cents for East Texas oil, but do not post a price.

EASTERN STATES

Joseph Seep Purchasing Agency
(Effective September 12, 1931)

Pennsylvania Grade Oil in Southwest Pennsylvania Lines 1.80
Penna Grade Oil in Eureka Pipe Line Lines (West Virginia) 1.70
Penna Grade Oil in Buckeye Pipe Line Lines (Sept. 4, 1931) 1.60
Corning Grade Oil in Buckeye Pipe Line Co.'s Line (Sept. 16, 1931) ..... .90
Ragland Grade Oil in Cumberland Pipe Lines (Kentucky) (Jan. 16, 1931) .... .60
Wayne district Oil in Cumberland Pipe Lines (April 23, 1931) 1.17

Pennzoil Co.
(Effective October 8, 1931)

Pennsylvania grade oil in National Transit lines* ..... $2.00 to $2.05

*Price depends on length of pipe line haul to plant at Oil City.

Tide Water Pipe Co.
(Effective September 12, 1931)

Bradford, Pa., crude $2.35
Allegany, N. Y., crude 2.35

Pure Oil Co.
(Effective September 12, 1931)

Cabin Creek, W. Va. $1.70
Bradford Hollow, W. Va. 1.70

TEXAS PANHANDLE

Gray County, Wheeler County and Carson-Hutchinson Counties. See gravity table

WEST TEXAS

Iatan and Westbrook. . Same as North Texas
Crane, Upton, Crockett, Howard, Glasscock, Ector, Winkler and Pecos Counties* ..... $ .35
Lea County, N. Mex.* ..... .35
Toborg, Pecos County, Aug. 25, 1931†. . .35

*The Texas Company, August 22, 1931. All other companies, August 22. †Shell Petroleum Corp.

GULF COAST

Grade A and Grade B classifications discontinued by leading buyers ..... See gravity table
Jennings, La. (Aug. 22, 1931)* ..... $ .50
Lockport, La. (Aug. 27, 1931)† ..... See Gulf Coast gravity table
Refugio light ..... See gravity table
Refugio heavy (Aug. 22, 1931)‡ ..... .60
Markham (Aug. 22, 1931)§ ..... .52
..... See Gulf Coast gravity table
High Island (Aug. 22, 1931)§ ..... .50

*Gulf Refining Co. †Vacuum Oil Co. ‡Humble Oil & Refining Co. §The Texas Company. Other companies July 24. ¶Gulf Pipe Line Co.

NORTH LOUISIANA AND ARKANSAS

Smackover, Ark. (all grades) See note below
Urbana, Ark. ..... See note below
Bellevue, La. (June 3, 1931) ..... $ .25
Urania, La. (Aug. 24, 1931) ..... .40
Calion, Ark. (Aug. 22, 1931) ..... .52
East El Dorado, Ark. (Aug. 22, 1931) .. .45
Stephens, Ark., below 29° (August 24, 1931) ..... .41
Stephens, Ark., 29° and above (August 24, 1931) ..... .44
Other fields ..... (See gravity table)

Note—Smackover, all grades, The Texas Company, August 22, 1931, 52 cents; Gulf Refining Co., August 22, 45 cents; Magnolia Petroleum Co. and Standard Oil of Louisiana, August 24, 45 cents. Urbana posting discontinued by Standard Oil Co. of Louis-

(Continued on Page 94)

CRUDE OIL GRAVITY TABLE

	Okla., Kans., East Central and North Central Texas (1)	North Louisiana and Arkansas (2)	Gray County, Texas (3)	Carson and Hutchinson Counties, Tex. (4)	Salt Creek, Wyo. (5)	Gulf Coast (6)
Below 25 degrees	...	...	...	...	...	.55
25-25.9 degrees	...	...	...	...	...	.56
26-26.9 degrees	...	...	...	...	...	.57
27-27.9 degrees	...	...	...	...	...	.58
28-28.9 degrees	...	...	...	...	...	.59
Below 29 degrees	.46	.46	...	...	.46	...
29-29.9 degrees	.48	.48	...	...	.48	.60
30-30.9 degrees	.50	.50	...	...	.50	.61
31-31.9 degrees	.52	.52	...	...	.52	.62
32-32.9 degrees	.54	.54	...	...	.54	.63
33-33.9 degrees	.56	.56	...	...	.56	.64
34-34.9 degrees	.58	.58	.46	.41	.58	.65
35-35.9 degrees	.60	.60	.48	.43	.60	.66
36-36.9 degrees	.62	.62	.50	.45	.62	.67
37-37.9 degrees	.64	.64	.52	.47	.64	.68
38-38.9 degrees	.66	.66	.54	.49	.64	.69
39-3.99 degrees	.68	.68	.56	.51	.64	.70
40 degrees and above	.70	.70	.58	.53	.64	.71

Note—Magnolia Petroleum Co. does not pay on a gravity basis. The Magnolia company posted the following notices on August 22 and August 24 as indicated:

"Effective August 22, 1931, and until further notice our prices on crude oil will be as follows per barrel at the wells: Central Texas, which includes only Mexia, Wortham, Corsicana light, Panola County, and Lytton Springs, 64 cents; Panhandle district of Texas, Gray County, 58 cents; Carson and Hutchinson Counties, 51 cents; West Texas, being Crane, Upton, Howard, Glasscock and Mitchell Counties, 35 cents; Mirando, 60 cents; Darst Creek, 52 cents; Luling, 34 cents; Corsicana heavy, 34 cents. Oklahoma, including Cushing, Yale, Oklahoma City, Morrison, Wewoka and Seminole, 68 cents; Cement, Duncan, and Walters, 60 cents; Healdton, 37 cents; Hewitt and Graham, 52 cents. North and Central Texas, including only Burkburnett, Archer, Stephens, Henrietta, Electra, Comanche and Olden, 68 cents; East Texas, 68 cents. The White Eagle Oil Corp., effective September 28, posted the following prices in Kansas: Group 1—Eastborough, Wright, Robbins, Greenwich, Lorena and North Greenwood Pools, 70 cents; Group 2—Eastman, Fox-Bush and Keighly, 68 cents; Group 3—Smock, Sluss, Leon, Weaver, Peabody and Rock, 66 cents; Group 3A—Ritz-Canton, 64 cents; Group 4—Urschell, Florence, Elbing, Nuttle-Koogler, Augusta, 62 cents; Group 5—Gelwick, 46 cents.

Effective August 24, 1931, Magnolia Petroleum Co.'s prices on crude oil in the states of Louisiana and Arkansas will be as follows per barrel at the wells: Louisiana, Bull Bayou, 68 cents; Haynesville, 50 cents; Pine Island, 58 cents; Cotton Valley, 46 cents. Arkansas, El Dorado and Rainbow, 48 cents; El Dorado East Field and Smackover district, 45 cents.

Column 1—The Texas Company (excepting Kansas), August 22; Gypsy Oil Co., Gulf Pipe Line, Carter Oil Co., Humble Oil & Refining Co., Stanolind Crude Oil Purchasing Co., Sinclair Refining Co., Continental Oil Co., Skelly Oil Co. (Kansas), Empire Pipe Line Co., Wilcox Oil & Gas Co., Tidal Refining Co., Pure Oil Co., Vickers Petroleum Co., Derby Oil Co., all on August 22. Standish Oil Co., September 17, 1931.

Column 2—The Texas Company, August 22; Gulf Refining Co., August 22; Standard Oil Co. of Louisiana, August 24; Louisiana Oil Refining Co., August 24.

Column 3—The Texas Company, August 22; Gulf Pipe Line Co., August 22; Humble Oil & Refining Co., August 22; Wilcox Oil & Gas Co., September 17, 1931; Philtex Oil Co., September 17, 1931.

Column 4—The Texas Company, August 22; Gulf Pipe Line Co., August 22; Humble Oil & Refining Co., August 22; Philtex Oil Co., September 17, 1931.

Column 5—The Mid West Refining Co., August 22.

Column 6—The Texas Company, August 22; Humble Oil & Refining Co. and Gulf Pipe Line Co. on August 22 but their price schedule stops at 35 and above at 66 cents. Sun Oil Co. and Sinclair Refining Co. met Humble-Gulf prices effective August 22, but Sun posted a price of 55 cents for Grade A oil, it being the only company that maintains A and B grade classifications. The Vacuum Oil Co. applied the schedule to Lockport on August 27.

CALIFORNIA CRUDE OIL PRICES

STANDARD OIL CO. OF CALIFORNIA

For its current purchases of crude oil at the well (unless otherwise specified) for allowable crude oil produced in accordance with allocations made by the California Statewide Curtailment Committee. All gravities above those quoted take highest price offered in that field. Effective June 19, 1931, at 7 a. m.

Gravity	Signal Hill	Seal Beach, Alamitos Heights	Huntington Beach	Inglewood	Olinda-Brea Canon	Torrance	Richfield	Coyote Hills	Santa Fe Springs	Midway-Sunset, Elk Hills, Buena Vista Hills	Lost Hills
14-14.9	$.65	$.65	$.65	$.65	$.65	$.65	$.65	$.65	...	$.55	$.55
15-15.9	.65	.65	.65	.65	.65	.65	.65	.65	...	.55	.55
16-16.9	.65	.65	.65	.65	.65	.65	.65	.65	...	.55	.55
17-17.9	.65	.65	.65	.65	.65	.65	.65	.65	...	.55	.55
18-18.9	.65	.65	.65	.65	.65	.65	.65	.65	...	.55	.55
19-19.9	.65	.65	.65	.65	.65	.65	.65	.65	...	.55	.55
20-20.9	.65	.65	.65	.66	.66	.65	.65	.65	...	.55	.55
21-21.9	.65	.65	.65	.68	.67	.65	.66	.65	...	.55	.57
22-22.9	.65	.65	.66	.70	.68	.66	.68	.65	...	.56	.59
23-23.9	.67	.67	.68	.72	.70	.67	.70	.66	...	.58	.60
24-24.9	.69	.69	.70	.74	.72	.68	.72	.67	$.65	.61	.62
25-25.9	.71	.71	.72	.76	.74	.70	.74	.69	.65	.64	.64
26-26.9	.73	.73	.74	...	.76	...	...	.71	.65	.66	.66
27-27.9	.75	.75	.76	...	.78	...	...	.73	.68	.68	.67
28-28.9	.77	...	...	...	.80	...	...	.75	.71	.71	.69
29-29.9	.79	...	...	...	...	...	...	.77	.73	.74	.71
30-30.9	.81	...	...	...	...	...	...	.79	.75	.76	.73
31-31.9	...	...	...	...	...	...	...	...	.78	...	...
32-32.9	...	...	...	...	...	...	...	...	.80	...	...
33-33.9	...	...	...	...	...	...	...	...	.83	...	...
34-34.9	...	...	...	...	...	...	...	...	.85	...	...
35-35.9	...	...	...	...	...	...	...	...	.87	...	...

Standard Oil Co. of California prices in other fields:

Wheeler Ridge—55 cents per barrel for all grades (14° to 35.9°).

Coalinga—55 cents for all grades from 14° to 24-24.9°; 57 cents for 25 gravity.

Newhall, McKittrick and Kern River—55 cents for all grades (14° to 19.9°).

Montebello—65 cents for all grades (14° to 35.9°).

Whittier and LaHabra—65 cents for all grades (14° to 22.9°).

Elwood Terrace, f.o.b. ship—32° to 33.9°, 79 cents; 34° to 34.9°, 81 cents; 35° to 35.9°, 84 cents; 36° and above, 87 cents.

Playa Del Rey—Prices subject to field gathering charge of 5 cents per barrel—19° to 19.9°, 65 cents; 20° to 20.9°, 65 cents; 21° to 21.9°, 66 cents; 22° to 22.9°, 67 cents; 23° to 23.9°, 68 cents; 24° to 24.9°, 67 cents; 25° and above, 68 cents.

(Continued on Page 102)

TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns Oct. 13

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
Chicago	14.0	14.0	3.0	9.0*
Decatur, Ill.	14.4	14.4	3.0	9.0
E. St. Louis	13.7	13.7	3.0	8.3
Joliet	14.4	14.4	3.0	9.0
Peoria	14.4	14.4	3.0	9.0
Quincy	14.2	14.2	3.0	8.8
Davenport, Ia.	14.5	12.5	3.0	9.3
Des Moines	14.5	13.4	3.0	8.0
Keokuk	14.5	14.5	3.0	6.3
Sioux City	14.1	14.1	3.0	8.9
Duluth, Minn.	15.5	15.5	3.0	9.9
Mankato	15.1	15.1	3.0	8.0
Minneapolis	15.2	13.4	3.0	9.9
La Crosse, Wis.	16.2	16.2	4.0	10.0
Milwaukee	15.1	15.1	4.0	8.9
Madison	15.3	15.3	4.0	9.1
Detroit, Mich.	14.8	14.5	3.0	10.7
Grand Rapids	14.7	14.7	3.0	10.6
Saginaw	14.9	14.9	3.0	10.3
Evansville, Ind.	15.1	15.1	4.0	9.9
Indianapolis	15.3	15.3	4.0	9.0
South Bend	15.4	15.4	4.0	10.2
Fargo, N. D.	16.9	16.9	3.0	11.9
Huron, S. D.	16.3	16.3	4.0	10.7
Sioux Falls	15.8	15.8	4.0	10.4
K. C., Mo.	13.9	13.9	3.0	7.6
Springfield*	13.9	13.9	3.0	8.5
St. Louis*	12.9	12.4	2.5	8.3
St. Joseph	13.5	13.5	3.0	7.5
Wichita, Kans.	13.8	13.8	3.0	7.8
Bartlesville, Ok.	13.0	16.0	5.0	7.0

*State tax 2 cents, remainder city tax.

A third grade of gasoline, "Stanolind Blue," is sold at all major points at a price 2 cents or more below the price on the regular grade.

Effective April 15—Discounts on Q.D.A. on 1,000 gallons or more per month throughout territory; Red Crown Ethyl Gasoline, 2 cents off tank wagon price; Red Crown gasoline, 2½ cents off tank wagon price; Stanolind Blue gasoline, 1 cent off tank wagon price. On deliveries of 75,000 gallons or more each classification allowed 1 cent additional discount.

Discounts on resellers authorized agent's agreement: Same amounts as above except made off service station price instead of tank wagon price.

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
Dallas, Tex.	13.0	14.0	4.0	8.0
Fort Worth	13.0	14.0	4.0	8.0
Houston	13.0	14.0	4.0	11.0
San Antonio	13.0	14.0	4.0	10.0
El Paso	14.0	16.0	4.0	13.0
Texarkana	13.0	14.0	4.0	11.0
Muskogee, Ok.	13.0	14.0	5.0	8.0
Okla. City	13.0	15.0	5.0	7.0
Tulsa	13.0	15.0	5.0	8.0
Ft. Smith, Ark.	*15.5	16.5	5.0	11.0
Little Rock	*16.5	17.5	6.0	11.0

One-cent rebate made from posted station prices to cash purchasers in Louisiana, Arkansas and Tennessee.

*Less 2 cents to dealers.

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
Omaha	15.25	16.25	4.0	9.25
McCook	16.00	17.75	4.0	10.75
Norfolk	15.75	16.75	4.0	9.75
N. Platte	16.75	17.75	4.0	10.50
Scottsbluff	16.00	16.00	4.0	10.25

Note—Dealers' discount allowed as follows: Red Crown Ethyl, 3 cents off station price; Red Crown, 2½ cents off normal service station price; Nebraska Blue (third grade) 1 cent off normal service station price.

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'd tax of	Kero. tank wagon
Denver, Colo	14.0	17.0	4.0	12.5
Pueblo	15.0	18.0	4.0	12.0
Grand Jctn.	13.0	20.0	4.0	14.5
Casper, Wyo.	14.0	17.0	4.0	10.0
Cheyenne	15.0	18.0	4.0	11.5
Butte, Mont.	17.0	20.0	5.0	16.0
Billings	20.0	23.0	5.0	14.5
Great Falls	20.0	23.0	5.0	16.0
Helena	20.0	23.0	5.0	16.0
Salt Lake, Utah	17.5	20.5	4.0	16.0
Albu'que, N.M.*	18.0	21.0	6.0	14.0
Boise, Idaho	20.5	23.5	5.0	18.0
Twin Falls†	20.0	20.0	5.0	18.0

*One-cent excise city tax. †Three-cent discount off tank wagon to dealers.

PACIFIC COAST TERRITORY

	Gasoline: Wh'ls'e price	Gasoline: Retail* price	Gasoline: Incl'ds tax of	Kero. tank wagon
Fresno	19.5	16.5	3.0	17.0
San Francisco	19.5	16.5	3.0	15.5
Los Angeles	19.0	16.0	3.0	15.5
Reno, Nev.	23.5	20.5	4.0	19.0
Portland, Ore.	21.0	18.0	4.0	16.5
Seattle, Wash.	22.0	19.0	5.0	16.5
Tacoma	22.0	19.0	5.0	16.5
Spokane	25.5	22.5	5.0	20.5
Pheonix, Ariz.	15.5	16.0	5.0	20.0

Above prices are at company's plant or depots as company does not operate stations. A 6-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where the discount is 3 cents plus a 2-cent special temporary discount subject to withdrawal at any time.

*Retail prices posted by Standard Stations, Inc., a subsidiary.

PENNSYLVANIA-DELAWARE AND PART OF NEW ENGLAND

Atlantic Refining Co.

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
Pittsburgh, Pa.	*11.0	*12.0	...	11.0
Philadelphia	*10.0	*10 0	...	11.0
Scranton	*11 0	*12.0	...	11.0
Allentown	*11 0	*12 0	...	11.0
Altoona	*11 0	*12 0	...	11 0
Erie	*11.0	*12.0	...	11.0
Dover, Del.	14.0	15.0	3.0	11.0
Wilmington	14.0	15.0	3.0	11.0
Springf'd, Mass.	13.0	13 0	3.0	10.0
Worcester	14.3	15.3	3.0	10.0
Boston	13.5	14.5	3.0	10.0
Providence, R.I.	12.1	13.1	3.0	10.0
Hartford, Conn.	14.5	15.5	3.0	10.0
New Haven	14.6	15.6	3.0	10.0

*Does not include tax of 3 cents in Pennsylvania. Pennsylvania tax is collected by the dealer and paid by him direct to the State. The above prices are subject to discounts to the dealers and to commercial accounts under contract for one year in accordance with Code of Ethics.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
N. Orleans, La.	14.5	14.5	6.0	12.0
Baton Rouge	15.0	16.0	5.0	12.0
Alexandria†	16.0	17.0	6.0	13.0
Lafayette*	16.0	17.0	6.0	12.0
Lake Charles*	15.5	16.5	6.0	12.0
Shreveport	15.5	16.5	5.0	12.0
Knoxville, Tenn.	18.5	19.5	6.0	13.5
Memphis	16.5	17.5	6.0	10.0
Chattanooga	18.0	19.0	6.0	12.0
Nashville	17.5	18.5	6.0	12.5
Bristol	18.0	19.0	6.0	14.0
Lt. Rock, Ark.	16.5	17.5	6.0	11.0

*Includes city tax of 1 cent. Louisiana kerosene prices include 1-cent state tax. New Orleans kerosene price also includes 1-cent city tax.

†Gasoline price at Alexandria includes 1-cent tax in parish of Rapides.

Two-cent discount off gasoline and kerosene tank wagon price to dealer and commercial accounts.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
Atl'tic City, N.J.	14.7	15.7	3.0	11.5
Newark	13.7	14.7	3.0	10.5
Annapolis, Md.	15.2	16.2	4.0	11.0
Baltimore	14.4	15.4	4.0	8.5
Cumberland	16.2	17.2	4.0	12.0
Wash'ton, D. C.	12.9	13.9	2.0	10.7
Danville, Va.	17.0	18.0	5.0	11.5
Norfolk	15.5	16.5	5.0	10.3
Petersburg	16.5	17.5	5.0	11.3
Richmond	15.9	16.9	5.0	10.7
Roanoke	17.2	18.2	5.0	12.0
Charles'n, W.Va.	15.7	16.7	4.0	11.5
Keyser	16.3	17.3	4.0	12.1
Parkersburg	14.4	15.4	4.0	10.2
Wheeling	15.6	16.6	4.0	11.4
Charlotte, N. C.	17 0	17.0	6.0	10.7
Hickory	18.8	19.8	6.0	12.6
Mount Airy	18.7	19.7	6.0	12.5
Raleigh	18.4	19.4	6.0	12.2
Salisbury	18.7	19.7	6.0	12.5
Charleston, S.C.	16.5	17.5	6.0	10.3
Columbia	18.4	19.4	6.0	12.2
Spartanburg	18.7	19.7	6.0	12.5

Two cents per gallon discount off retail tank wagon price of gasoline to dealers except Washington, D. C., and State of Maryland and New Jersey, where discount is 3 cents.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
Albany, N. Y.	16.6	17.6	3.0	15.6
New York*	15.3	15.3	2.0	14.3
Buffalo	15.8	15.8	2.0	14.8
Rochester	16.0	16.0	2.0	14.0
Syracuse	16.8	16.8	2.0	14.8
Boston, Mass.	16 5	16.5	3.0	13.5
Augusta, Me.	18.8	18.8	4.0	14.8
Manch'tr, N. H.	18.4	18.4	4.0	14.0
Burlington, Vt.	19.3	19.3	4.0	15.3

*Prices in steel barrels.

OHIO

Standard Oil Co. (Ohio)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
Ohio points	15.0	16.0	4.0	*12.0

Dealers and commercial accounts 2 cents under tank wagon.

*Service station price 13 cents.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
Atlanta, Ga.	18 0	18 0	6 0	12.5
Augusta	19.0	20.0	6.0	14.0
Macon	19.0	19.0	6.0	12.0
Savannah	17.0	17.0	6.0	12.0
Birm'ham, Ala.	15.5	15.5	6 0	13.0
Mobile	19 5	19.5	5.0	10.0
Montgomery	19.0	19.0	5.0	13.5
Clarks'le, Miss.	18.0	20.0	5.0	13.5
Jackson	15 5	15.5	5 0	11 5
Natchez	18.0	20.0	5.0	13.5
Gulfport	16 0	16.0	5.0	13.5
Vicksburg	15 5	15 5	5.0	11 5
Jack'ville, Fla.	19.0	19 0	7.0	12 0
Miami	19.0	19.0	7.0	13.0
Pensacola	20 0	21.0	7.0	13.0
Tampa	18.0	18.0	7.0	12.0
Lexington, Ky.	18.0	19.0	5.0	12.0
Covington	17.0	19.0	5.0	11.0
Louisville	17.0	18.0	5.0	10.0
Ashland	17.0	19.0	5.0	13.0
Paducah	18.0	18.0	5.0	11.0
Bowling Green	19.0	21.0	5.0	14.5
Corbin	18.0	19.0	5.0	15.0

A third grade "Kyso Green," is sold at a price generally 2 cents below the price on the regular grade.

In addition to the state tax of 4 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and one-half cent on kerosene. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fourth cent on gasoline. To Pensacola, Montgomery and Birmingham state taxes add 1-cent levy tax. To Gulfport state tax add privilege tax of 2 cents. To Mobile state tax add 1-cent city tax and 2½ cents county tax.

Effective April 1 price to dealers 2 cents under posted tank wagon price.

NAPHTHA

	Tank wagon	Tank car
Oleum spirits	10.7	6.0
V.M.P. naphtha	12.7	7.5
Cleaners' naphtha	14.2	9.0
Stanisol	14.2	9.0

Tank wagon prices f.o.b. Chicago and Whiting, effective July 1.

STANOLIND FURNACE OIL IN CHICAGO

Effective July 1, prices f.o.b. Chicago, tank wagon prices: 1 to 99 gallons, 8 cents; 100 gallons or more 6 cents.

Stanolax Fuel

Effective May 9, f.o.b. Chicago, tank wagon prices: 1 to 199 gallons, 7 cents; 200 gallons or more, 5 cents. Sinclair met this by bringing down the price of its No. 3.

Fuel Oils

Chicago tank wagon prices (in lots of 400 gallons and over): 35-40 straw distillate, 6 cents; 32-36 gas oil (light zero), 5.5 cents; 32-36 gas oil (industrial), 5.25 cents; 28-30 zero fuel oil, 5 cents; 24-26 fuel oil, 4.25 cents; 18-22 fuel oil, 3.75 cents.

TANK WAGON CHANGES

Standard Oil Co. (Kentucky) advanced the gasoline tank wagon and station prices in Jacksonville, Fla., to 19 cents each on October 5. On October 7 these prices were reduced to 16½ cents in Jack-

(Continued on Page 103)

CRUDE PRICE CHANGES ON PAGE 103

CRUDE OIL PRICES

(Continued from Page 93)

iana on August 24, 1931. Bellevue posted by Magnolia Petroleum Co.; Urania by Louisiana Oil Refining Co.; Calion by Gulf Refining Co.; East El Dorado by Gulf Refining Co. and Magnolia Petroleum Co.; Stephens, Ark., by Louisiana Oil Refining Co. and Atlantic Oil Producing Co.

SOUTH CENTRAL AND SOUTHWEST TEXAS

Darst Creek (Aug. 22, 1931)*	$ .52
Luling (Aug. 22, 1931)†	.34
Mirando (Aug. 22, 1931)*	.60
Pettus (Aug. 22, 1931)*	.76
Salt Flat (Aug. 22, 1931)*	.52
Thrall§	
Lytton Springs (Lockhart)	See gravity table
Dobrowolski‖	
Same as Mid-Continent gravity scale up to and including 38-38.9°.	
Somerset¶	
Same as Mid-Continent gravity scale up to and including 38-38.9°.	

*Texas, Humble and Gulf all posted on August 22. †Magnolia Petroleum Co. §Thrall prices same as North Central Texas less 19½ cents per cwt. freight. ¶Grayburg Oil & Refining Co., Pioneer Oil & Refining Co. and Texas Petroleum Products. ‖Pioneer Oil & Refining Co.

ROCKY MOUNTAIN STATES

Ohio Oil Co.-Midwest Refining Co.

Iles, light (Aug. 24, 1931)	$ .75
Iles, heavy (Aug. 24, 1931)	.43
Fort Collins (Aug. 24, 1931)	.61
Florence (Aug. 24, 1931)	.50
Wellington (Aug. 24, 1931)	.51
Dutton Creek (Aug. 24, 1931)	.60
Rock Creek, Wyo. (Aug. 24, 1931)	.70
Frannie, light (Aug. 24, 1931)	.51
Frannie, heavy (Aug. 24, 1931)	.43
Salt Creek	Mid-Continent gravity table
Big Muddy (Aug. 24, 1931)	.68
Grass Creek (Aug. 24, 1931)	.90
Elk Basin (Aug. 24, 1931)	.90
Lance Creek (Aug. 24, 1931)	1.05
Poison Spider (Mar. 5, 1931)	.70
Notches (Mar. 14, 1927)	.65
Hudson (June 2, 1931)	.65
Lander (Mar. 5, 1931)	.40
Rex Lake (Feb. 23, 1930)	1.10
Osage (Apr. 15, 1931)	.90
Lost Soldier (Aug. 25, 1931)	.64
Hamilton Dome (Mar. 14, 1927)	.65
Greybull (Aug. 24, 1931)	.90
Torchlight (Aug. 24, 1931)	.90
Cat Creek (Aug. 24, 1931)	.90
Pondera (Aug. 24, 1931)	.80
Sunburst, Mont. (Aug. 24, 1931)	.70
Hogback, N. Mex. (Aug. 24, 1931)	.80
Lea County, N. Mex. (Aug. 24, 1931)	.35
Border, Mont.	1.55
Red Coulee, Alberta	1.55
Dry Creek, Mont. (Aug. 24, 1931)	1.00
Maljamar (Aug. 22, 1931)	1.00
Artesia-Jackson (Aug. 22, 1931)	.35

Note—Salt Creek, Cat Creek, Dry Creek, Dallas-Derby, Hudson, Greybull and Hogback posted by Midwest Refining Co. and remainder by Ohio Oil Co. Both companies posted Grass Creek light and Elk Basin, Lost Soldier posted by Producers & Refiners Corp. Artesia, Jackson and Maljamar posted by Continental Oil Co. Border and Red Coulee posted by Imperial Refining Co. Ohio Oil Co. ceased posting Artesia on March 5, 1931. Lea County posted by Humble Oil & Refining Co. Fort Collins, Wellington, Orchard, Florence, Rattlesnake and Table Mesa by the Continental Oil Co. Osage posted by Arro Oil & Refining Co.

MIDDLE WESTERN STATES

Ohio Oil Co.

(Effecive August 24, 1931)

Lima	$ .90
Wooster	1.00
Illinois	.80
Indiana	.50
Princeton	.90
Plymouth	Shut in
Western Kentucky	.75
Midland, Mich.*	.73
Dundee, Mich.†	
Same as Stanolind Crude Oil Purchasing Co.'s Mid-Continent gravity scale	
Upper and Lower Traverse Sands, Mich.†	
Same as Mid-Continent gravity scale	
Somerset, Ky. (Sept. 26, 1931)	.65
Hart County, Ky. (Oct. 1, 1931)§	.50

*Posted by Pure Oil Co. †Posted by Standard of Indiana for boat shipment. ‡Posted by Stoll Refining Co. Somerset, Ky., crude purchased by Ashland Refining, Ashland, Ky., and delivered through Cumberland Pipe Line.

MEXICO

Panuco*	$ .45

*F.o.b. ship, based on September transactions and exclusive of production and export taxes and bar dues.

CANADA

Ontario (Aug. 24, 1931):	
Petrolia*	$1.89
Oil Springs*	1.87
Alberta (Aug. 24, 1931):	
Turner Valley:†	
Crude oil 45-49.9	2.00
Crude oil 50 and above	2.05
Crude naphtha	2.13
Discolored naphtha	2.03

*Imperial Oil, Ltd. †Imperial Oil, Ltd., and Regal Oil & Refining Co.

Of Interest to Sales Departments

Shell President Opposes Sale of Third Grade Fuel

NEW YORK, Oct. 12.—The American Shell companies will not engage in the manufacture of a third-grade gasoline, regarding this as a backward step which they are unwilling to take, but will meet the competition of the third-grade product sold by competitors by lowering the price of their regular branded product, says J. V. Van Eck, president of the Shell Union Oil Corp., in a message to the company's dealers.

"The sale of unbranded or so-called 'bootleg' gasoline in an increasing number of places," says Mr. Van Eck, "has made the adoption of a definite policy of meeting this competition necessary for the protection of Shell dealers and Shell patrons.

"After an exhaustive study of the situation, the Shell companies have determined that the only sound and effective method of meeting such cut price competition is to make the price of Shell 400 Extra Dry Gasoline comparable with that of the unbranded gasolines. In reaching this decision the Shell companies have been guided by a realization of the necessity of facing facts without quibbling.

"The facts are that a veritable flood of cheap crude oil has caused some refiners to manufacture more gasoline—much of it of such low quality as to prevent it from being marketed under a brand name—than they can dispose of through the usual channels. This distress

(Continued on Page 102)

TEST ROAD OILS

V. R. Black has been named project engineer by the Oklahoma State Highway Commission to conduct the road oil tests which will determine the type of oils the department will purchase for use in the state highway system.

Tests are to be made on U. S. Highway 66 from the end of the pavement west to El Reno to Geary. Samples of oil are to be asked of each company producing road oils, these to be furnished with their bids on the various grades.

OIL ON ROADS

WASHINGTON, D. C., Oct. 12.—A total of 35,883 miles of county and township roads were surfaced during 1930, according to the Bureau of Public Roads. Of the total surfaced mileage of this class of roads, aggregating 467,338 miles, 19,059 were macadam roads given a bituminous penetration. Plain gravel roads aggregated 310,308 miles with surface treatment by the use of road oil or otherwise.—C. E. K.

TRINIDAD PRODUCTION

During the first eight months of 1931 Trinidad produced 6,574,761 bbls. of crude oil. Exports during the same period included 1,741,996 bbls. of crude oil and 1,158,534 bbls. of gasoline.—C. E. K.

ACQUIRES STATIONS

The Hygrade Oil Co. of Hartford, Conn., has acquired nine filling stations of the Connecticut Oil Co. located in Connecticut. The Hygrade company for several years has been a large distributor of lubricating oils.

NORTH CAROLINA STATIONS

North Carolina has 12,269 service stations and filling stations, according to a report of the state revenue collector.

STANDARD CALIFORNIA POSTS $1,000 REWARD

SAN FRANCISCO, Calif., Oct. 14.—The Standard Oil Co. of California is offering a reward of $1,000 for information leading to the arrest and conviction of marketers of petroleum products who evade payment of the state tax. This reward will be paid in at least 20 cases if that number is reached and the company may extend this offer if the present practice of tax evasion continues.

This move was taken to protect the retail market against price cutters who were able to undersell the ligitimate dealer because the price cutter evaded paying the tax. This step is construed as very constructive in the program recently inaugurated among the larger refiners and marketers for stabilizing the retail markets.

EUGENE FELT JOINS AMERICAN

Eugene C. Felt, for the past two years associated with Dale W. Moore in Tulsa as a purchasing and sales representative of refinery products, has joined the American Petroleum Co., and has opened offices for that company in the Tower Petroleum Building in Dallas, Tex.

This connection also establishes Mr. Felt as representative of the Allegheny Seaboard Oil Corp. Prior to his work with Dale Moore he represented the Petroleum Oils Corp. of Kansas City in Indianapolis, Ind., and before this, gained an introduction to the industry in the manufacturing and sales departments of the Empire Oil & Refining Co.

VANDALS CAUSE DAMAGE

NORFOLK, Neb., Oct. 12.—About 50,000 gallons of gasoline were allowed to flow from storage tanks onto the ground here as the result of vandals opening the valves on a number of tanks along the tracks north of the city. The various companies have grouped their storage facilities and all were affected.

APPOINT COMMITTEE TO REPORT ON TAX EVASION

W. S. S. Rodgers, The Texas Company, New York, has been made chairman of a committee appointed by Edward G. Seubert, Standard Oil Co. of Indiana, Chicago, vice president of the American Petroleum Institute's Division of Marketing, to review and discuss the subject of gasoline tax evasion. The committee has been instructed to report in writing to the Division of Marketing general committee at a meeting to be held in Chicago Monday, November 9, in connection with the institute's twelfth annual meeting.

Members of the committee are: J. W. Carnes, Sinclair Refining Co., New York; H. D. Collier, Standard Oil Co. of California, San Francisco, Calif.; S. B. Eckert, Sun Oil Co., Philadelphia, Pa.; W. T. Holliday, Standard Oil Co. of Ohio, Cleveland, Ohio; R. D. Leonard, Atlantic Refining Co., Philadelphia, Pa.; G. R. Nutty, Gulf Refining Co., Pittsburgh, Pa.; C. D. Sheffield, Standard Oil Co. of New Jersey, New York, and H. A. Wilkinson, Standard Oil Co. of New York, New York.

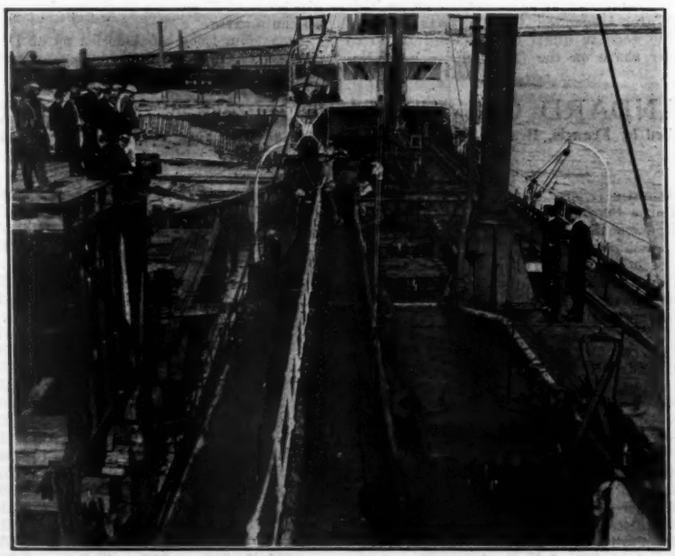
BUILD LARGE TERMINAL

The New England Terminal Co. has announced plans for the construction of a large bulk terminal at Quincy, Mass. The plant which will cost $2,000,000 will include 32 storage tanks, an administration building, two warehouses, a garage and two truck loading warehouses. M. P. Shean is president of the company.

COLUMBIA EXPORTS

WASHINGTON, D. C., Oct. 12.—Colombia exported 10,306,808 bbls. of crude oil during the first seven months of this year, 6,800,000 bbls. going to the United States, 3,000,000 bbls. to Canada, 200,000 bbls. to Argentine, 150,000 bbls. to Italy and 100,000 bbls. to Belgium.—C. E. K.

UNLOADING RUMANIAN GASOLINE AT DETROIT



The first shipment of Rumanian gasoline was unloaded early in the month at the bulk terminal of the Sunny Service Oil Co., a large independent jobbing company. The tanker arrived from Montreal. Additional shipments are to be made later. The gasoline was purchased from the Steaua Romana, an independent company controlled by British and French interests. Contrary to reports the company is not affiliated with the Royal Dutch-Shell.

RECORD ATTENDANCE AT BANQUET OF OIL TRADE

NEW YORK, Oct. 10.—Old Man Depression was thrown for a loss and entirely forgotten by the New York oil trade on Monday of this week when more than 700 members and guests of the Oil Trades Association of New York turned out for the sixteenth annual banquet of the organization, held in the grand ballroom of the new Hotel Waldorf-Astoria.

The attendance was by far the largest in the history of the association, and included many prominent out-of-town oil men who came to New York for the first banquet to be held in the grand ballroom of the new Waldorf.

Oscar, famous figure in the Waldorf-Astoria's long history, was present at the speakers' table, with Albert J. Squier, J. C. Smith, Phil Meon, C. T. Weihman, president of the association; W. H. Correa, vice president of the Standard Oil Co. of New York; J. W. Saybolt, also of Socony; C. D. Jones, president of the Philadelphia Oil Trades Association; and Dennis Bergin, of the Cook-Swan Oil Co.

The guests' list constituted a veritable who's who of the local oil industry. Among those well known in trade circles who were seen at the banquet were the following:

P. R. Johnson and W. G. Post, of the David C. Reid Co., Inc.; Charles Chrisman, of Smith & Nichols; Chalmers Burns and Ray Parker, Jr., vice presidents of Richfield Oil Corp. of New York; F. J. Filer, vice president, Shell Eastern Petroleum Products, Inc., and E. E. Overton, general sales manager for Shell Eastern; Frank B. Ross, John Smith, John Baer and S. P. Drummond, of Reliant Oil Co.; W. Doremus, of the White Oak Refining Co.; Richard Phelps, sales manager for the Colonial-Beacon Oil Co.; Frederick Ficken, manager of the fuel oil department of the Standard Oil Co. of New Jersey; O. G. Waring, president, Borne-Scrymser Co.; Henry Schwartz, president, Paragon Oil Co.; Bernard Frankel, vice president, Warner-Quinlan Co.; R. C. Van Cleaves, vice president, Hartol Refining Co.; L. C. Quackenbush, Harry Jensen and Dart Hoffman, of the Tide Water Oil Co.; William Wilson, of the Republic Oil Co.; Frank Walton, Asiatic Petroleum Co.; Sidney Tonner, of the Falcon Fuel Co.; and M. B. Whitney, of M. B. Whitney & Co.

THIRD GRADE IN OHIO

The Standard Oil Co. of Ohio this week will start the introduction of a third grade gasoline at its service stations located in Ohio. It is expected that similar action will be taken immediately by many of the other major distributors in the State.

The third gasoline will be colored green and will be called "Hy-So Green." It will sell at service stations 2 cents under the Standard's Ex-70 which is the company's regular grade. A discount of 1½ cents will be allowed dealers in handling the gasoline.

PURE ORGANIZES SUBSIDIARY

The Pure Oil Co. has organized the Pure Oil Products Co. at Chicago to handle its refined oil products through the service stations of the Keystone Oil & Manufacturing Co. in the Chicago territory.

This arrangement, which was announced from Chicago headquarters Saturday afternoon, will give the Pure Oil Co. a Chicago outlet for the first time and will not conflict with its present operations in that district.

Third Quarter Reports of Earnings

Expected to Reflect Recent Improvements in Statistical Position of the Industry. More Favorable Than June Showing

By A. E. Mockler
New York Bureau, The Oil and Gas Journal

NEW YORK, Oct. 12.—Third quarter earnings reports of the major oil companies are expected to reflect recent improvements in the statistical position of the industry, and will disclose a much more favorable showing than that recorded during the June quarter, according to reports in financial circles.

Inventory adjustments, which adversely reflected the reports of various companies during the first six months of 1931, have shown a turn for the better in the current quarter, and valuations of holdings of both crude and products have shown some increase during the past six weeks. This development, together with the large volume of gasoline sales by major marketers, and the higher retail prices, have resulted in a substantial improvement in the earning position of the industry.

Earnings during the first six months this year were almost generally unfavorable, and developments during the closing half of the year can do little more than offset earlier losses, leaving little, if any, net for the average company, it is believed, but the fact that the industry is again on a profit-making basis is regarded as extremely significant in market circles.

A compilation of 20 oil companies listed on the New York Stock Exchange, made up by Dow-Jones & Co., shows a net loss of $25,542,067 for the first half of 1931, compared with net earnings of $69,742,933 in the first six months of 1930 and net profit of $89,415,232 in the first half of 1929, as follows:

	1931	1930	1929
Amerada	*$478,225	$401,060	$354,114
Am. Rep.	*1,541,483	46,577	164,713
Atlantic	*4,013,000	2,818,833	5,862,469
Barnsdall	*1,815,493	3,367,440	4,115,253
Cont'al.	*6,528,841	$2,643,520	$2,200,536
Gen. Asph't	*170,667	206,680	461,760
Houston	462,313	1,014,417	779,433
Mex. Seab.	18,288	565,866	114,489
Pan. P&R	*294,678	*26,542	99,457
Phillips	†25,306,376	†10,200,535	†4,510,507
Prai. PL	3,208,000	10,550,250	10,975,000
Rio Grde	*1,997,392	2,232,302	3,032,372
Shell Un.	*20,959,506	*250,977	9,509,659
Skelly O	*2,702,383	1,282,784	3,198,936
S.O. of Cal	5,642,968	19,718,524	20,108,331
Simms	*1,699,653	*40,762	417,747
Sun Oil	1,049,403	3,658,157	3,637,540
Tex. Pac.	†191,026	†647,553	†969,655
Tide Wt.	*1,077,464	5,595,535	5,042,020
Union O	1,900,000	5,150,000	7,000,000
Total	.*25,542,067	$69,742,933	$89,415,232

*Net loss. †Before depreciation and depletion. ‡Net loss $2,674,153 after all charges in 1931, against net profit of $4,635,399 in first half of 1930. §Profit before Federal taxes. ¶Loss before depletion.

Union Oil

Voting to continue regular dividends, the board of directors of the Union Oil Co. of California declared the usual quarterly payment of 50 cents a share, payable November 10 to stockholders of record October 17. Stock transfer books will not be closed. Union Associates also declared the regular 50 cents dividend carrying the same dates. The company's statement follows:

Net earnings of Union Oil for the nine months ended September 30, 1931, after provision for depletion, depreciation and drilling expenditures, amounted to $3,200,000, equivalent to 73 cents a share on the 4,386,070 shares outstanding during the period, according to L. P. St. Clair, president of the company. This compares with a net of $8,000,000, or $1.84 a share on 4,345,120 shares for the similar nine months of 1930.

Solar Refining Dissolves

Solar Refining Co. has filed with the Secretary of State of Ohio a certificate of dissolution, this action following the approval by stockholders of the sale of Solar properties to the Standard Oil Co. of Ohio. Under the terms of the sale, stockholders have the option of obtaining immediately a final cash liquidating dividend of $17 per share on their Solar stock, or exchanging it on the basis of 1 share of Standard of Ohio common for each 3.6 shares of Solar Refining. To effect the exchange for Ohio Standard stock, shareholders are required to turn in their certificates to the Chase National Bank of New York, the exchange period expiring November 30. To receive the liquidating dividend, Solar Refining stock certificates must be forwarded immediately to Solar Refining Co., Lima, Ohio, for cancellation.

Tide Water Preferred

Tide Water Oil Co., controlled by Tide Water-Associated Oil Co., has declared the regular quarterly dividend of $1.25 per share on the preferred, payable November 16 to holders of record October 17.

Sinclair Oil

Sinclair Consolidated Oil Corp. and subsidiaries report for six months ended June 30, 1931, a net loss of $10,415,088 after taxes, interest, depreciation, depletion, amortization, etc. This compares with net profit in first half of 1930 of $3,251,709 equal after dividend requirements on 8 per cent preferred stock, to 49 cents a share on 5,420,080 no-par shares of common stock.

Simms Petroleum

Charles D. Hartman, Jr., has been elected a director of the Simms Petroleum Co., in place of Robert R. Young, resigned.

Consolidated Royalty

The Consolidated Royalty Oil Co., Casper, Wyo., has declared a quarterly dividend of 5 cents per share, payable October 25, 1931, to stockholders of record of October 15.

Phillips Petroleum

The Phillips Petroleum Co. reports for August consolidated earnings of $420,308, after all charges and reserves. In addition, a nonrecurring profit of $1,172,515 from the sale of gas rights was announced. In the first six months of the year the company reported a deficit of $2,674,153. Bank loans have been reduced by $4,500,000, the company announces. Amos L. Beatty, former chairman of the Transcontinental Oil Co., has been elected a member of the Phillips executive committee.

Prairie Pipe Omits

Directors of Prairie Pipe Line Co., meeting at Independence, Kans., October 1, omitted the regular quarterly dividend of 75 cents per share due at this time. A statement issued by the company said: "The present depression in the oil business with the consequent reduction in the earnings of the company and the feeling on the part of the management that the cash of the company should be conserved" was responsible for the action. Prairie Pipe has paid in 1931 two dividends of 75 cents per share each, the last on June 30. Since the 5-for-1 split-up in Prairie Pipe Line stock early in 1929 the company has paid quarterly dividends of 75 cents a share regular, and 50 cents extra.

Petroleum Corp. of America as of December 31, 1930, held 555,600 shares of Prairie Pipe Line stock, and the current action of the Prairie company thus cuts substantially into the income of the former.

Salt Creek Cuts

Salt Creek Producers Association has declared a quarterly dividend of 25 cents per share, payable November 2 to stock of record October 15, placing the stock on a $1 annual basis, against $1.40 formerly.

Standard of New Jersey

Employes of the Standard Oil Co. of New Jersey and subsidiaries who are members of the third stock acquisition plan of the company will be given the privilege of borrowing on shares standing to their credit but not to be delivered to them until the termination of the plan at the end of 1931. This action has been taken by the company to alleviate cases of distress where employes are in danger of losing shares previously acquired or now being purchased. The company will lend to participants to the extent of $25 a share up to the total number of shares which have been purchased under the present plan for their account up to October 1, this year.

Pacific Public Service

A dividend of 32½ cents per share has been declared upon the first preferred stock of Pacific Public Service Co., payable on November 2, 1931, to stockholders of record October 15, 1931.

Pan American Dividends

Pan American Petroleum & Transport Co., subsidiary of Standard Oil Co. of Indiana, has declared a dividend of 40 cents per share on the 3,418,088 shares of combined A and B common stocks, payable October 20 to stock of record September 30. A similar dividend was paid on July 20 of this year.

Pan American reports for the six months ended June 30, 1931, earnings of $4,031,051 after depreciation, depletion, amortization and intangible development costs, inventory adjustments, etc., but before Federal taxes, comparing with $7,988,361 in the first six months of 1930. Inventory adjustments place product inventory on the basis of market or cost.

Eureka Pipe Line

Eureka Pipe Line Co. has declared the regular quarterly dividend of $1 a share,

(Continued on Page 104)

STANDARD OIL STOCKS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

(Complete record week ending October 3)

1931 High	1931 Low	Week ended Oct. 3 Sales	Week ended Oct. 3 High	Week ended Oct. 3 Low	Close Oct. 7	Stocks—	Outstanding capital	Par value	Div. rate	Last paid	1928 High	1928 Low	1929 High	1929 Low	1930 High	1930 Low
1	⅛	900	¼	¼	..	Atlantic Lobos	499,448	N.P.	....	5-28-30	..	..	..	..	1	¼
16	6¼	100	7	7	..	Borne Scrymser	$1,000,000	$25	....	10-15-30	56½	44½	46½	25	25	11¾
56	39	500	42	39	..	Buckeye Pipe Line	$10,000,000	$50	$1Q	9-15-31	76	53	74½	55	69	39⅞
129½	95	100	95	95	..	Chesebrough Mfg.	$3,000,000	$25	$1Q‡	9-30-31	161	117	210	130	184⅞	104¼
3⅞	1⅝	9,400	2	1¾	1⅝	Creole Petroleum (sh)	5,977,872	N.P.	....	.....	17½	9½	11¾	5⅝	7⅞	3
39	20⅝	450	23	21	23⅝	Cumberland Pipe Line	$1,500,000	$50	50cQ	6-15-31	114	67	75¾	40	65¾	20½
36	19⅞	300	22	19⅞	23	Eureka Pipe Line	$5,000,000	$100	$1Q	8- 1-31	88	64½	70½	40	54¾	26
3	1	No sales	..	..	..	Galena Signal Oil	$16,000,000	$100	....	.....	13	4¼	6½	3	7	2½
72	47¾	8,900	50	48⅝	47¾	Humble Oil & Refining	$74,103,300	$25	50cQ	10- 1-31	114¾	59½	128	74⅛	119	57⅛
18¼	7⅝	28,900	9¾	7⅝	9⅛	Imperial Oil of Canada (new) (sh)	25,421,768	N.P.	12½cQ	6- 1-31	104	56¾	41	22	30	15
21⅛	6½	200	8	7⅞	6½	Indiana Pipe Line (new)	$3,000,000	$10	25cQ	8-15-31	91⅞	74⅜	41⅞	26	41	14½
15½	7⅜	56,100	8⅞	7⅜	9⅛	International Petroleum (new) (sh)	14,247,088	N.P.	25cQ	9-15-31	55	35	30⅜	15	24	11⅜
17½	9	1,200	10½	9⅛	9	National Transit	$6,362,500	$12.50	25cQ	9-15-31	32⅜	19⅜	25⅛	10⅛	22⅜	11½
14½	5⅞	300	7⅛	6⅞	..	New York Transit	$1,000,000	$10	25cQ	7-15-31	75	38½	17½	10	21⅜	10¼
34½	20	100	26	26	..	Northern Pipe Line	$2,000,000	$50	$2SA	7- 1-31	69	56½	63	41	54	26¼
15½	6½	200	7	6½	..	Penn Mex Fuel	$10,000,000	$25	75c	6-24-31	84	28	44½	20	32	12
16½	3¼	5,800	16¾	15¼	16¾	Solar Refining	$4,000,000	$25	....	12-20-29	..	..	50	20	33	4⅝
23⅞	12	5,100	14	12	12½	South Penn Oil	$30,000,000	$25	25cQ	9-30-31	71⅞	36¾	60¼	35⅛	45⅞	16⅛
17	10	No sales	..	..	12½	Southern Pipe Line	$1,000,000	$10	50cQ	9- 1-31	19	15	22½	13	20⅞	8⅝
42½	25	No sales	..	..	..	Southwest Pennsylvania Pipe Line	$1,750,000	$50	$1Q	7- 1-31	102	70	70	60	64	32
38½	17⅝	64,800	20¼	17⅝	17⅞	Standard Oil of Indiana	$348,175,069	$25	25cQ	9-15-31	95⅞	70⅞	63	45	59⅞	30
23⅝	14⅛	19,300	16⅛	14⅛	15¼	Standard Oil of Kentucky	$25,654,516	$10	40cQ	9-30-31	179¾	122¼	46⅞	29	40½	18⅝
36½	19¼	100	24	24	..	Standard Oil of Nebraska	$4,649,225	$25	50cQ	9-21-31	54⅞	39⅞	50¼	40	48⅞	34⅝
62½	35	1,000	41	38	38	Standard Oil of Ohio	$14,000,000	$25	62½cQ	10- 1-31	134	71	129	60	108½	43¼
4½	2⅝	No sales	..	..	..	Swan-Finch Co.	$861,466	$25	....	1-15-29	23¼	16	18	10	10	4

*Ex-dividend. †Unit of trading less than 100 shares. ‡Plus 50 cents extra.

INDEPENDENT OILS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

(Complete record week ending October 3)

1931 High	1931 Low	Week ended Oct. 3 Sales	Week ended Oct. 3 High	Week ended Oct. 3 Low	Close Oct. 7	Stocks—		Outstanding capital	Par value	Div. rate	Last paid	1928 High	1928 Low	1929 High	1929 Low	1930 High	1930 Low
1⅛	¼	3,200	½	¼	⅜	American Maracaibo	(sh)	700,000	N.P.	....	.....	9½	3⅛	8⅝	1⅛	4½	½
16⅞	7½	600	8¼	7½	8¼	British American Oil Corp.		1,311,321	N.P.	20cQ	7- 2-31	55	32¾	62	7⅞	23	13⅜
2⅜	½	2,100	½	½	..	Carib Syndicate		$131,250	25c	....	.....	4½	3⅞	4⅞	1	2¾	⅝
20¾	5¼	181,500	7¾	5⅝	6½	Cities Service	(sh)	24,290,359	N.P.	30cA§	10- 1-31	90⅞	54	68⅛	20	44¼	13
84¾	35⅜	3,600	59⅜	47½	48	Cities Service pfd.	(sh)	1,500,000	N.P.	50cM	10- 1-31	103¼	94½	98¾	84	93⅞	78¼
½	⅛	1,600	⅛	⅛	..	Colombia Syndicate		$2,000,000	$1	....	.....	3¼	.76	2	½	¾	⅛
2¾	1⅜	100	1⅜	1⅜	..	Consolidated Royal		$5,527,875	$10	50cQ	10-25-31	8⅞	6¼	11⅛	2½	5⅞	2
⅝	⅛	500	¼	⅛	..	Crown Central		.....	....	....	.....	..	..	..	..	..	..
5	2	900	2½	2	..	Darby Petroleum (new)		1,019,392	N.P.	....	10-15-30	33½	3¼	26	6½	21¾	4¼
6	2	4,000	2⅝	2	2	Derby Oil & Refining	(sh)	500,000	N.P.	....	.....	2¼	1	11	2	11	2
40⅛	25	No sales	..	..	..	Derby Oil & Refining pfd.		48,500	N.P.	....	.....	21⅛	7½	44	20¾	60	30
75½	38	14,900	42	38	41	Gulf Oil Corp.	(sh)	4,504,921	$25	37½cQ	10- 1-31	165	101⅛	209	115	166⅞	58½
⅝	1/16	5,800	1/16	1/16	¼	Intercontinental Petroleum		$5,682,000	$5	....	.....	3⅜	1	2⅞	⅜	1¾	⅜
1⅞	1/16	No sales	..	..	..	Kirby Petroleum	(sh)	750,000	N.P.	....	.....	3	1¼	3⅝	1¼	3	⅞
1½	⅛	4,100	½	1/16	⅜	Leonard Oil & Development		$50,000,000	$25	....	.....	9⅜	5⅛	6⅛	1	4¾	½
6¾	2¾	400	2¾	2¾	..	Lion Oil & Refining	(sh)	250,000	N.P.	....	10-27-30	43⅞	20	38⅞	18	29	4⅞
25	7½	19,000	10	7¾	8½	Lone Star Gas	(sh)	5,000,000	N.P.	22cQ	9-30-31	69⅛	48½	67⅞	28	55⅞	19⅝
½	⅛	6,300	¼	⅛	..	Magdalena Syndicate	(sh)	850,000	$1	....	.....	1⅞	½	1¼	½	½	⅛
5	2⅝	100	2⅝	2⅝	..	Margay Oil Corp.		160,000	N.P.	....	7-10-30	48½	32	38½	14	16	3
4⅞	1½	No sales	..	..	..	Mexico-Ohio Oil Co.		500,000	N.P.	....	.....	8	2¾	6¾	2¼	7½	1¾
½	⅛	400	⅛	⅛	..	Mountain & Gulf		$4,000,000	$1	....	4-15-31	1¾	.76	1½	½	¾	⅜
5⅞	2½	3,400	3½	2½	3½	Mountain Producers		$1,682,182	$10	25cQ	7- 1-31	28⅞	19½	22⅞	7	12⅛	3¾
1½	½	300	½	½	..	New Bradford Oil		$1,095,291	$5	....	4-15-31	5⅝	4¼	5	2½	3½	1⅛
3	1	100	1⅛	1⅛	1⅛	New Mexico and Arizona		$1,000,000	$1	....	.....	11⅞	7⅛	9⅜	2¼	7¼	1½
3¼	1	100	1	1	..	North Central Texas	(sh)	400,000	N.P.	....	9- 2-30	14¼	8½	18½	6⅛	11¼	2⅛
½	⅛	1,900	1/16	⅛	1/16	Pandem	(sh)	489,875	N.P.	....	.....	6	2⅛	3½	½	2½	¼
2	⅜	100	⅜	⅜	½	Pantapec Oil	(sh)	1,506,000	N.P.	....	.....	15⅝	8½	10½	1⅞	4⅜	⅞
3⅛	½	1,600	1¼	1	..	Reiter-Foster	(sh)	388,584	N.P.	....	12- 2-29	12⅞	4⅛	8½	1⅛	5⅜	1
3	1	100	1½	1½	..	Ryan Consolidated	(sh)	500,000	N.P.	....	.....	12	4⅛	11	2	8⅝	2
1⅜	¼	800	½	¼	..	Salt Creek Consolidated	(sh)	1,286,300	$10	....	4- 1-31	7¼	5½	5⅞	1⅞	2½	½
7¾	4	3,600	5	4	4¼	Salt Creek Producers	(sh)	1,496,859	$10	25c	11- 2-31	35	23⅛	25⅞	9	15¼	5¼
5¼	¾	4,700	1⅛	¾	⅞	Sunray Oil	(sh)	1,163,185	$5	....	4-15-31	..	..	12	5⅝	10	2
1⅞	½	3,400	½	½	½	Venezuelan Petroleum	(sh)	755,090	$5	....	2-15-30	9⅛	4¾	6½	1¾	4½	⅜
3½	1⅛	No sales	..	..	1⅜	Woodley Petroleum		$500,000	$1	....	3-31-29	8¼	4⅞	9½	2	5	½
2¼	¼	4,700	¾	½	⅝	Y Oil & Gas		100,000	N.P.	....	.....	8⅜	2⅛	2⅞	½	2½	⅜

*Ex-dividend. †Unit of trading less than 100 shares. ‡Payable monthly and monthly stock dividend of one-half per cent. §Paid in lieu of regular cash dividend of 2 per cent.

TRANSACTIONS IN OIL SHARES ON NEW YORK STOCK EXCHANGE

Quotations Compiled by Francis, Bro. & Co., Members of the New York Stock Exchange and Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

(Complete record week ending October 3)

1931 High	1931 Low	Week ended Oct. 3 Sales	Week ended Oct. 3 High	Week ended Oct. 3 Low	Close Oct. 7	Stocks—		Outstanding capital	Par value	Div. rate	Last paid	1928 High	1928 Low	1929 High	1929 Low	1930 High	1930 Low
23	13½	8,400	15½	13½	15	Amerada Corp.	(sh)	922,075	N.P.	50cQ	7-31-31	43⅞	27⅛	42⅝	17½	31½	16½
12⅝	3	2,000	3½	3	2⅝	American Republics Corp.	(sh)	209,180	N.P.	....	12-31-30	85	51⅛	64¾	12½	37	5⅛
31	9½	60	10¾	9½	..	Associated Oil		$57,260,300	$25	35c	6-30-31	53⅜	37½	47¼	34½	51	30
23⅝	10	20,800	12	10	11⅜	Atlantic Refining		$66,763,775	$25	25cQ	9-15-31	66⅜	50	77⅞	30	51⅜	16⅝
14½	5	39,800	6	5	5⅝	Barnsdall Corp. A		$56,546,600	$25	....	5-11-31	54	20	49⅛	20	34	8⅝
12	5	48,100	7⅛	5¾	6	Continental Oil of Delaware	(sh)	4,741,554	N.P.	....	12-15-27	..	..	47⅞	18	30½	7¾
47	9⅝	29,400	12⅜	9⅝	12⅛	General Asphalt	(sh)	413,333	N.P.	50cQ	9-15-31	94⅞	68	94¾	42¼	71½	22⅜
68½	22¾	13,400	29	23⅛	22¾	Houston Oil		$24,968,600	$100	....	10-17-30	167	79	109	26	116⅞	29¼
4⅝	1⅝	3,500	2½	1⅝	1⅞	Indian Refining		$12,564,070	$10	....	10- 1-30	39⅝	9	53	13⅛	17	2
4½	1½	5,400	2	1½	1⅝	Louisiana Oil Refining	(sh)	1,190,063	N.P.	....	.....	19¾	9⅜	18	7	12	3½
3¾	½	1,000	1	⅝	..	Maracaibo Oil	(sh)	330,000	N.P.	....	.....	25½	12½	18½	5⅛	10⅜	1⅜
16¾	5	18,600	6¼	5	6	Mid-Continent Petroleum	(sh)	1,857,912	N.P.	....	2-16-31	44½	25⅛	39⅞	22⅛	32	11
19½	6½	24,100	7¾	6¾	7	Ohio Oil	(sh)	6,648,052	N.P.	....	3-14-31	84	58½	79⅞	64¼	32	16
35⅛	20	300	24½	20	..	Pan American P. & T.		$50,084,700	$50	40c	7-20-31	50⅞	38¼	69	40½	46½	42
36½	20	1,100	25	20	20	Pan American P. & T. "B"		$121,110,650	$50	40c	7-20-31	59⅞	37¾	69¼	40½	67¼	30
4¼	¾	800	1	¾	..	Panhandle P. & R.	(sh)	199,370	N.P.	....	.....	21¾	11½	15¼	3	12¾	1¾
20⅛	10	120	10½	10	..	Panhandle P. & R. pfd.		$2,564,400	$100	....	.....	108	70	76	47½	20	47½
16⅝	4¾	46,500	6⅛	5	5¼	Phillips Petroleum	(sh)	2,593,075	N.P.	....	1- 2-31	53⅞	35¼	47	24¼	44⅜	11½
1½	½	4,400	½	½	½	Pierce Oil Corp.		$29,622,831	$25	....	.....	5¼	½	3⅜	1	2½	½
3⅜	1	14,800	1¼	1	1⅛	Pierce Petroleum	(sh)	2,500,000	N.P.	....	2-16-31	7	3½	5⅞	½	7⅛	1⅛
20⅜	6½	8,400	8	6½	6½	Prairie Oil & Gas		$60,848,000	$25	....	3-31-31	68	46	65⅜	40½	54	11¼
26½	7⅝	20,500	13	7⅝	7⅞	Prairie Pipe Line		$101,250,000	$25	....	6-30-31	280	172	65	45	60	16⅝
6	1⅝	1,700	2⅛	1⅝	..	Producers & Refiners		$37,438,950	$50	....	9-15-23	29⅞	16	25⅞	4	11⅞	1
16	6	No sales	..	..	..	Producers & Refiners pfd.		$2,845,350	$50	....	5- 4-25	49⅝	41	46¾	25½	40	11½
11⅞	5⅛	21,500	6⅛	5⅛	5½	Pure Oil		$75,959,250	$25	....	9- 1-30	31⅝	19	30⅜	20	27¼	7⅝
6⅜	⅞	5,700	1	⅞	1	Richfield Oil (new)		$52,410,875	N.P.	....	.....	56	23	49⅝	20	9¾	4⅛
10¼	2⅛	6,800	3	2⅛	2¾	Rio Grande Oil	(sh)	1,236,270	N.P.	....	7-25-30	37½	32	42½	15	25⅜	5
42⅝	13½	5,500	20	17⅜	18¾	Royal Dutch N. Y.	(sh)	611,303	....	$0.938	8- 4-31	64	44⅝	64	43⅛	56½	36⅞
20¾	6⅝	46,000	9¼	6⅝	7⅛	Seaboard Oil of Delaware (Mex. Seab.)	(sh)	1,244,383	N.P.	....	10- 1-24	72	4⅝	59⅜	8¼	37	9¾
34	10	No sales	..	..	..	Shell Transport & Trading Co.		£23,985,000	£1	$0.966	7- 6-31	47⅞	41⅜	51½	40⅝	48⅜	26
10¼	3¼	28,300	4⅜	3¼	4	Shell Union Oil	(sh)	13,066,497	N.P.	....	6-30-30	39¼	23¼	31¾	19	25½	5¼
11	4¾	3,400	6	5¼	5½	Simms Petroleum		$8,353,620	$20	....	9-15-30	27½	18⅛	40⅛	15	37	5⅝
15⅞	6	67,500	7	6	6¼	Sinclair Consolidated	(sh)	5,500,000	N.P.	....	4-15-31	46¾	17⅜	45	21	32	9¾
103	77	800	91½	81	80	Sinclair Consolidated pfd.		$16,025,250	$100	$2Q	8-15-31	110	102½	111	103	112¼	86
12⅞	3⅛	3,500	4⅛	3½	4	Skelly Oil		$27,441,250	$25	....	12-15-30	42⅝	25	40½	28	12	10⅛
21	13	87,400	15⅝	13	13⅞	Socony-Vacuum	(sh)	31,923,072	$25	40cQ	9-15-31	..	..	..	..	..	..
51¾	29⅜	60,510	31⅞	29⅜	30½	Standard of California	(sh)	12,594,098	N.P.	62½cQ	9-15-31	80	63	81⅞	51½	75	42½
19	8¼	3,500	10½	8¼	10	Standard of Kansas		$8,000,000	$25	....	3-16-31	37¾	15	33⅜	18	49	14⅜
52½	28⅞	150,800	31¼	28⅞	30¾	Standard Oil of New Jersey		$634,999,200	$25	25cQ§	9-15-31	59⅜	37¾	83	49	84⅞	32½
45¼	26¾	18,400	36	26¾	35½	Sun Oil	(sh)	1,416,869	N.P.	25cQ	9-15-31	77	31½	68⅜	55	70	39
1¾	½	1,600	¾	½	..	Superior Oil Corp.	(sh)	766,979	N.P.	....	12-20-30	..	..	24	5¼	9⅜	¾
36¼	15½	69,200	19¼	15½	17¼	The Texas Corporation		$246,204,900	$25	50cQ	10- 1-31	74¾	50	71⅞	50	60½	28¼
6½	2½	1,600	3⅛	2¾	3⅜	Texas Pacific Coal & Oil Co.		$9,304,890	$10	....	12-31-29	26⅝	12⅛	23⅞	9½	14½	4
18	10½	No sales	..	..	..	Tide Water Oil	(sh)	2,191,759	N.P.	15cQ	6-30-31	41½	19⅝	40	14	31	13
83	48¾	No sales	..	..	..	Tide Water Oil pfd.	(sh)	19,947,000	N.P.	$1.25Q	8-15-31	100⅛	86	97½	85⅛	94⅞	71
9	3½	27,600	4½	3½	3½	Tide Water Associated	(sh)	5,560,424	N.P.	....	2-16-31	25	14¾	23½	10	17¾	5⅞
68	20½	3,200	28¼	20½	24	Tide Water Associated pfd.		$73,284,500	....	$1.50Q	10- 1-31	..	..	90⅞	74⅛	89¾	55
28⅝	11¾	18,300	13⅞	11¾	14	Union Oil of California		$104,342,375	$25	50cQ	8-10-31	58	42⅝	57	42⅛	50	10⅛
25⅛	19	4,200	19⅛	19	19	Union Tank Car	(sh)	1,254,048	$100	40cQ	9- 1-31	128⅛	110	163¾	121⅞	38½	23
7⅝	1	2,000	2⅝	1	1⅜	Warner-Quinlan	(sh)	632,948	N.P.	....	7- 1-30	44⅞	26	42⅞	15	27	4¼
9⅝	3	3,400	4¼	3	3½	Wilcox Oil & Gas	(sh)	428,907	N.P.	....	5-10-28	..	..	29¾	12⅞	21	6½

*Ex-dividend. †Unit of trading less than 100 shares. ‡Plus extra dividend of 25 cents.

In comparing highs and lows for the several years in the three tables, it will be necessary to take into consideration cases where there have been stock split-ups.

Two New Wells and Five Due Next Week In Wayne Gas Field

By Special Correspondent

CORNING, N. Y., Oct. 10.—In the Wayne village field in Schuyler County, New York, the Lycoming Natural Gas Co. completed its well on the Crosby property and it was good for 2,500,000 feet of gas and, Palmer B. Smith completed a 2,500,000-foot well.

Five wells will be ready for completion in the Wayne Field, New York, next week. These include the Tri-State Gas & Electric Co.'s No. 1 Olszewski, George Case's No. 1 Baptist Church property, Huron Gas Co.'s No. 1 Walsh; same company's No. 1 Andrews and the Burns Oil & Gas Co.'s No. 1 Clark.

Earl J. De Golier has announced that he will drill wells on the Strowbridge and Phare farms north of the village of Wayne for the Pentoga Gas Co., of Elmira. Developments in the field are now being carried on over a widespread area with many wildcats started in searches for extensions of the Wayne and Dundee Fields, or for new areas.

The Tri-State Gas & Electric Co.'s No. 1 Webb, 1 mile north of Townsend, Schuyler County, New York, is believed to be a dry hole. It was at a total depth of 2,900 feet Friday night, with no sign of the Oriskany sand having been found. The Elmira Natural Gas Co. is still shut down on No. 1 Berthod on the River Road not far from Elmira, Chemung County. These wells have been closely watched as possible extensions to the gas area on the New York side of the state line.

Tools have been moved to two locations in the Addison district, Steuben County. J. Bruce Reed will drill on the Sovocool farm, 2 miles west of Rathbone, and unidentified owners will drill on the Dorr T. Martin farm. The Tri-State Gas & Electric Co. is drilling below 600 feet on its No. 1 Lewis Hill in the Addison district.

Very little news of interest came out of the Pennsylvania side of the New York-Penn gas field. The Penn United Gas Co.'s wildcat on the George Boom farm in Lawrence Township, was just above 4,000 feet and it should soon be known whether or not this well is to be a gas producer. The important wildcat of the same company on the Bradford County Fair Grounds near Towanda is still bothered with cavey hole at a total depth of 5,157 feet. It is 22 feet in the lime that lies above the Oriskany sand in other parts of the field in Pennsylvania.

TRANSPORTING GAS FROM FIELD TO THE MARKET

(Continued from Page 14)

the inch for all screwed pipe and tubes up to 10 inches in diameter. Later the value of these tables was realized and they were adopted as standard and known as the "Briggs Standard."

Two Great Strides

Most of the major pipe lines have been built in the last five years and it has been during this same period that two great strides have been taken in the pipe manufacturing industry. These have been the introduction of electrically welded pipe and the manufacture of seamless pipe up to and including 24 inches in diameter. Because of the fact that only low carbon steel can be welded by the ordinary methods of heating to welding temperature, these two processes have been able to use higher carbon steel and obtain greater tensile strength with thinner walls. These two types of pipe have recently been developed to the point that steel with ultimate tensile strength of between 70,000 and 80,000 pounds per square inch has been used.

Just as much a problem over these years as the finding of the proper type of pipe was the quest for a suitable pipe line joint. Practically all of the earlier pipes, clay, wood and cast iron were joined by a bell and spigot joint together with some material for holding them tight. When wrought iron, both butt and lapwelded, came into use, a screwed joint was used. This joint served for many years within its limits in both oil and gas lines but it had some unavoidable faults which had to be overcome. So it was, in search for a more efficient joint by engineers, pipe liners and pipe manufacturers, that such joints as the Mathieson and Converse, and couplings such as the Dayton and Dresser were developed. These developments are recorded in the years between 1880 and 1900.

The process of oxy-acetylene weldings was first suggested by a Frenchman about 1895 after calcium carbide had been produced for the first time in the electric furnace. The first welding equipment for factory use was introduced into the United States from France about 1905, but it was not until 1910 that the first attempts to join pipe by this method were made. Although some shorter lines were welded, it does not seem that much progress in the use of the welded joint was made for four or five years. One of the first applications of this method for gas service was in 1911, when the Philadelphia & Suburban Gas Co. welded an 11-mile line south of Philadelphia. In the Mid-Continent area the Oklahoma Natural welded 10 miles of 10-inch from Dilworth to Enid, Okla., and the Wichita Pipe Line Co. welded a line from Drumright to Cushing, Okla., a distance of possibly 10 miles. These lines were both laid in 1914.

Field Welding

Field welding seemed to have started in the East about the same year and the first welded natural gas line in California, an 8-inch line from the Coyote Hills to Lynwood, followed in 1915.

In 1916 the manufactured gas industry made use of gas welding when the Western United Gas & Electric Co. of Aurora, Ill., laid some 40 to 50 miles of solid welded 4 and 6-inch pipe.

Although the natural gas industry appears to have generally accepted the use of welded fittings, headers, shorter lines, etc., the oil industry was the first to go into solid welded long lines. Before the gas industry had accepted the long welded line, the Prairie Pipe Line Co. had pioneered the way by laying, in 1921, 140 miles of solid welded 8-inch line. Shortly after this, in 1923, the Magnolia Petroleum Co. completed its first long welded line, to be followed by the Shell Petroleum Co., which built 1,330 miles of solid welded line in one project.

As far as welding went, the oxy-acetylene method held full sway until 1923, when electric field welding began in earnest. Since that time, little by little, pipe of higher quality has been introduced to the trade. In as much as the pipe line is no stronger than its weakest joint, the manufacturers of welding materials, both gas and electric, have kept pace with this improvement and are now offering a weld which will test just as strong or stronger than the pipe itself. As mentioned above, pipe is now being manufactured of metal having an ultimate strength of 70,000 to 80,000 pounds. On lines contructed with this pipe and welded by one method or the other, test pieces cut from the welds have shown close to 75,000 pounds tensile strength.

All of this leads us to a short history of pipe lines in general and natural gas lines in particular.

History of Pipe Lines

In this resume will be included some of the early history of oil pipe lines because it ties in so closely with the development of the first natural gas lines.

There seems to be a difference of opinion as to where the first gas well was discovered or where the first natural gas line was laid, but we do know that in some manner or other natural gas from that shallow well on the creek bank near Fredonia, N. Y., was conducted into the town and this is recorded in several places as being in the year 1824.

Gas was found along Lake Erie at Westfield, N. Y., in the bed of a creek. In 1828-29 some parties made a contract with the United States Government to supply the lighthouse at Barcelona Harbor with this gas. Using a fish barrel for a gasometer, they sealed it over a gas spring; then constructed of pine logs, a pipe line one-half mile long, running to the base of the lighthouse.

The next record we have of the use of pipe line for transporting natural gas was in 1841 when William Tompkins piped some gas from a well in the Kanawha Valley in West Virginia, to some salt vats and used the gas to evaporate the water.

Shortly before 1860 gas was being used to fire drilling boilers and to light and heat lease houses in Pennsylvania, West Virginia and Ohio.

First Oil Line

At this point the oil industry comes into prominence, and we find the first suggestion of an oil line made, in 1860, by Gen. S. D. Karns. His idea was to lay a line from Burning Springs to Parkersburg, W. Va., and to let the oil gravitate to the Ohio River, where it could be loaded on boats and shipped. The idea was excellent, but the line was never laid.

In 1862 J. L. Hutchinson invented a rotary pump which he believed could be used in the oil industry for pumping oil. His first line was a short one from a well on the Tarr farm, over a hill to the Humboldt refinery. The next year a longer line from the Sherman well in Sherman Flats, above Pioneer, Pa., was laid 3 miles up Oil Creek Valley to Miller's farm, at that time the terminus of the Oil Creek Railroad. Both of these lines were of cast iron, the joints being caulked with lead. It might be said for these lines that the pump was a huge success for the pressure it created blew the lead out of the joints and much oil was lost.

The final and successful attempt to pipe oil a distance without excessive leakage was accomplished in 1865 by Samuel Van Syckel. The line, from the famous Pithole oil field to the above station on Miller's farm, was 4½ miles in length and was, like the others, constructed of 2-inch pipe.

The construction of these lines, and especially the final successful one, caused about as much unemployment as we have at the present time, for thousands of farmers and teamsters with their teams from miles around had had employment in hauling the oil in barrels in their wagons to the river wharves or railroad stations. For those who have not experienced or read of these hectic days in the oil industry, I should like to recommend a careful perusal of the books and magazine stories dealing with this period.

In 1872 is recorded the first iron natural gas line—that 2-inch line from the Newton well to Titusville, Pa., a distance of 5 miles.

Before many long disatnce natural gas lines had been heard of we find that, in 1875, a 4-inch oil line 60 miles in length was laid from the lower oil country to Pittsburgh. This was followed by a line 5 and 6 inches in diameter and 111 miles long extending from Bear Creek to Cleveland, Ohio. The oil pipe lines continued to grow in size and length until there was a veritable network from the oil fields to various refineries and shipping points, but it was not until 1891, according to H. C. Cooper that we hear much of natural gas lines.

Long Distance Transmission

"Up to 1891 natural gas lines did not generally exceed about 8-inches in diameter. In 1891 the Indiana Natural Gas & Oil Co. laid two parallel pipe lines 8 inches in diameter a distance of 120 miles from natural gas wells drilled near Greentown, Ind., to Chicago. The pipe was made of wrought iron, connected with screwed couplings, and the gas was transmitted under an initial pressure of 525 pounds. Mechanical compression was used. This enterprise marked the beginning of long distance high pressure transmission in the United States."

It was in this same year that S. R. Dresser laid the first "Dresser" line. After founding in 1880 the Dresser business which manufactured an oil and gas well packer which he had patented, he devoted most of his time to the then present problem of discovering a better joint for natural gas lines. This led him to the original Dresser coupling which was so revolutionary in design that no one would accept it and give it a trial. So it was that in 1891 he finally had to prove the value of the coupling by using it in a natural gas project in which he himself was interested, 5 miles of 5⅝-inch line for the Malta & McConnellsville Gas Co. at Malta, Ohio. It is said that this line is still in use at the present time. It is interesting to note that these original 5⅝-inch couplings or castings, weighed 110 pounds apiece.

From these early lines and struggles have been developed the great interlocking and intercommunicating systems that have been operating for the last 25 years. These systems, which have been built up line by line are quite apart from the new era which was started possibly five or six years ago, when it was realized that there were tremendous reserves of natural gas in the Southwest and West and that there were large markets 500 and 1,000 miles distant. Previous to the last few years this distance between the

OIL MAN'S CALENDAR

OCTOBER

12-15—Birmingham, Ala., U. S. Good Roads Association Convention, Tutwiler Hotel.

12-16—Chicago, Natoinal Safety Council.

12-16—Atlantic City, N. J., American Gas Association.

14-16—Pittsburgh, Pa., Society of Industrial Engineers.

27-29—Washington, D. C., S.A.E. National Transportation and Maintenance Committee, Shoreham Hotel.

29-30—Kansas City, Big Four State Oil Jobbers Association, Hotel President.

29-30—Roanoke, Va., Virginia Oil Men's Association, Patrick Henry Hotel.

NOVEMBER

10-12—Chicago, Twelfth Annual Meeting, American Petroleum Institute, Stevens Hotel.

16-21—Pittsburgh, Pa., Third International Conference on Bituminous Coal, Carnegie Institute.

30-Dec. 4—New York, Annual Meeting, American Society of Mechanical Engineers.

DECEMBER

2-3—Indianapolis, Ind., Indiana Petroleum Association, Hotel Severin.

7-12—Atlantic City, N. J., Trade Show, Motor and Equipment—National Standard Parts Associations.

9-11—Atlantic City, N. J., American Institute of Chemical Engineers.

9-11—Omaha, Neb., Nebraska Petroleum Marketers, Hotel Paxton.

28-31—Tulsa, Okla., Geological Society of America, Mayo Hotel.

1932

JANUARY

9-15—Detroit, Mich., Convention and Road Show, American Road Builders' Association, Airport Building.

9-16—New York, National Automobile Show.

11-12—Fargo, N. D., North Dakota Division, Northwest Petroleum Association, Waldorf Hotel.

14-15—Minneapolis, Minn., Minnesota Division, Northwest Petroleum Association, Radisson Hotel.

30-Feb. 6—Chicago, Ill., National Automobile Show.

MARCH

17-19—Oklahoma City, Okla., American Association of Petroleum Geologists.

APRIL

11-16—Boston, Mass., Ninth Annual Convention, American Oil Burner Association.

two offered a barrier which was believed insurmountable. But with improvements in pipe manufacture and much better construction methods, distance is no longer an obstacle in the construction of natural gas projects.

Recent Pipe Lines

This new era in long distance pipe line construction from new fields to new markets was really started in 1926 with the construction of 170 miles of 22-inch line from the Monroe gas field to Baton Rouge, to be followed by a 90-mile 18-inch extension to New Orleans. From that day to this there has been a continual construction period in which announcements of lines 20, 22 and 24 inches in diameter reaching out as far as 1,000 miles from the field to the market became every-day reading.

During this five-year building period such large centers as San Francisco, Salt Lake City, Denver, Sioux City, Lincoln, Chicago, St. Louis, Memphis, New Orleans, Birmingham, Atlanta and Washington have been reached by natural gas lines and other lines which are projected will serve Des Moines, Milwaukee, Minneapolis and St. Paul.

Although there have been many lines constructed during the past year there are certain lines, which because of their size or length or some unusual construction feature, have been brought before the public eye more than the rest.

Starting in the West and working towards the East we find three major lines either recently completed or else in some stage of construction. The business in San Francisco has been so good for the Pacific Gas & Electric Co. that it has had to add a 45-mile 26-inch line from Milpitas to San Francisco. This line will parallel the original line to the Bay region. Southern California Gas Co. has recently finished a new system consisting of 26, 22 and 20-inch pipe from the San Joaquin Valley to Los Angeles. In addition to this it is participating with the Southern California Edison Co. in a 26-inch line from Kettleman Hills to Long Beach, a distance of 210 miles. This line will augment the present supply available from existing lines for the business of the Southern California Gas Co. and will also assure a supply to the large generating plant of the Southern California Edison Co. at Long Beach. Although there are other 26-inch lines planned or being built at the present, this line bears the distinction of being the largest diameter long line in existence. It also is solid welded from end to end, mostly by electric welding and partly by the new Lindeweld process. All bends are made either with the accordian pleat expansion sleeve or by factory bends.

Montana Development

Quite a remarkable development in the Rocky Mountains of Montana has been the lines of the Montana Power Co. These lines are divided into two major projects, the 10¾-inch line from the Dry Creek Field in the southern part of the State to Livingston, Bozeman and several other towns. This line, which is 120 miles long, consists for 97 miles of the distance of electric welded pipe solid electrically welded in the field. The balance of the line is of the same type of pipe, but consists of three 30-foot sections, the middle joint of which is double belled and the others single belled, welded together and joined to the next section by Dresser couplings. The other projects, from the Cut Bank Field in northern Montana to Butte, Helena and Anaconda, has been considered by many experienced in pipe lines as one of the most difficult lines ever attempted. It consists of 199 miles of 20-inch, 16 miles of 16-inch and 8 miles of 12¾-inch. The 20-inch was electrically welded pipe with single belled ends and in 40-foot lengths. Using factory bends throughout, 80-foot sections were coupled with Dayton couplings.

One of the first lines to be started this year was the extension, called the Western Gas Co., of the present 16-inch line of the El Paso Natural Gas Co. from the Jal Field in New Mexico to El Paso, Tex. This line, taking off from the present line just east of El Paso, runs across New Mexico into Arizona, where it serves Douglas and Bisbee. From Nico, near Bisbee, it runs across the border to Cananea, in Sonora, Mexico. The markets which it reaches are the Phelps Dodge Corp., the Calumet & Arizona Mining Co. at Douglas and Bisbee, the Arizona Edison Co. and the Cananea Consolidated Copper Co. at Cananea. The main line consists of 218 miles of 12¾-inch electrically welded pipe and was one of the first to use a steel of 80,000 pounds tensile strength. All joints were electrically welded, bends being made with the use of factory bends. Due to the high tensile strength of the metal the line was designed to operate at a pressure of 600 pounds but it can safely be operated at 900 pounds.

From Deep Wells

To the east of this the Texas Public Service Co. connected for the first time the wells, which range from 8,500 to 8,900 feet deep, of the Big Lake Field in Pecos County, Texas. Forty-four miles of 8-inch Dresser line was run southwest to the Pecos Valley Power plant at Girvin, Tex., and 77 miles of 12¾-inch Dresser line was laid northeast to its present systems at San Angelo. These lines were laid in the fast time of 23 days.

North of these two projects was that of the Albuquerque Natural Gas Co. (Southern Union Gas Co.) which was the first line to cross the Continental Divide. This 10-inch and 12-inch line 300 miles long runs from the Farmington Field in New Mexico to Albuquerque and Santa Fe with a projected extension to Las Vegas. The country through which this line was laid was extremely rough and uninhabited, which may be judged from the fact that it was necessary to build 150 miles of road, in addition to the erection of more than 50 bridges ranging from 10 feet to 150 feet in length. The Lindeweld process was used except in rough country where Dresser couplings were applied.

Coming next to that tremendous gas reserve known as the Texas Panhandle we find the practical completion of the three greatest present-day projects using this field as their starting point.

Million-Acre Field

In addition to drawing from this field, the Northern Natural Gas Co. and the Panhandle Eastern Pipe Line Co., whose projects will be discussed in the following paragraphs, have lines into the Hugoton Field in southeastern Kansas. This field, mentioned in my last year's paper, has been developed so far approximately 70 miles in a north and south direction. It is the belief of some that it will cover over 1,000,000 acres. The producing horizon is in the lower Permian and is found at depths of from 2,600 to 2,900 feet. Due to the very conservative drilling agreements in the field, which limits one well to 160 acres, only 135 wells have been drilled. They show a total open flow of 858,000,000 feet with an average rock pressure of 430 pounds.

The first of the above mentioned projects, the Northern Natural Gas Co., jointly owned by the North America Light & Power Co., the United Light & Power Co. and the Lone Star Gas Corp., has built its system around, or starting with, the existing system of the Kansas Pipe Line & Gas Co. Its entire project involves nearly 2,700 miles of line, of which approximately 1,000 miles is finished. The lines completed at present consist of 118 miles of 16-inch, 123 miles of 20-inch and 427 miles of 24-inch, all electric welded pipe laid entirely with Dresser couplings. Under construction there are 65 miles of 16-inch Dresser coupled electric welded pipe and 180 miles of 26-inch electric welded pipe, which is being laid by welding two joints together and then a coupling. At present this line serves Lincoln, Neb.; Sioux City, Mason City and Council Bluffs, Iowa, and will soon reach Des Moines. Trade journals carry the rumors that the system will shortly be extended to Sioux Falls and Yankton, S. Dak., and Minneapolis and St. Paul. Besides the Texas Panhandle and the Hugoton Fields this line also is connected with the Medicine Lodge and Central Kansas fields. One of the unusual features of this system is that pipe line bridges were built across the Cimarron, Beaver and South Canadian Rivers.

Panhandle District

The second of the three lines emanating from the Panhandle district is the Panhandle Eastern Pipe Line Co., owned jointly by the Missouri-Kansas Pipe Line Co. and Columbia Gasoline & Oil Co., a subsidiary of the Columbia Gas & Electric Corp. Running northeast out of Texas to the Hugoton Field the line runs slightly northeast through Kansas, Missouri and Illinois to Rockville, Ind., where it terminates. From this point to Muncie, a distance of 90 miles, the Ohio Fuel Gas Co. is laying a 20-inch line so that Panhandle gas will be available for the general system of the Columbia. The main line consists approximately of 352 miles of 24-inch seamless pipe, all Dayton coupled, 399 miles of 22-inch lapwelded pipe gas welded with a coupiing every third joint, and 197 miles of 20-inch laid in the same manner. At the Mississippi River crossing the 22-inch line is hung from the new Champ Clark bridge near Louisiana, Mo. So many details of this and the Chicago line have appeared in newspapers and trade journals that it seems useless to enlarge on them here.

The Natural Gas Co. of America's line, better known as the Chicago line, also originates in the same district. The companies which are interested in the project and which formed the Continental Construction Corp. to handle the construction of the line are the Cities Service Co., Insull & Son, Inc., Columbia Carbon Co., Southwestern Development Co., Standard Oil Co. of New Jersey and The Texas Corporation. The main line, crossing six states, consists of 980 miles of 24-inch approximately half of which is electrically welded and the other half seamless pipe. The construction is practically alternate welding and coupling, both electric and gas welding being used. To give an idea of the project, figures appearing in trade journals show that 10,000 cars of pipe weighing nearly 220,000 tons and 50,000 couplings were used. The line is designed to operate at comparatively high pressures, 610 pounds for the present and 800 pounds ultimately. At these pressures the capacity of the line is respectively 175,000,000 and 225,000,000 cubic feet. Very naturally the compressor station initial installation is the largest on record. The first, or field station contains twelve 1,250-horsepower units, with the addition of nine main line stations each with five 1,250-horsepower units. This means 10 stations in all containing 17 units with a cumulative horsepower of 71,250. Rumors are current that this line will be continued on to Milwaukee and will be paralleled next year with a 30-inch line.

Terrific Obstacles

The United Gas Corp. has had an extensive building program on during the present year and one part of it particularly bears mentioning because of the terrific obstacles which had to be overcome. This is what is known as its Southwest Louisiana project consisting of 158 miles of main line between Kirbyville, Tex., and Franklin, La. In addition to this there are 265 miles of laterals which will serve 32 towns and cities, sugar refineries, salt mines and paper mills. Mountain peaks may seem insurmountable, but when ditching machines sink out of sight in rice fields and wooded swamps, pipelining becomes a real problem. Much of the terrain passed through was either a swamp by nature or a man-made one in the form of a rice field.

The Memphis Natural Gas Co. has been working on 60 miles of 10-inch and 40 miles of 8-inch line as an extension to its system to Jackson, Covington, Ripley and Brownsville, Tenn.

Holding up the reputation of the East in long, large diameter lines, the Columbia has been constructing a 20-inch line from Beaver Creek, in eastern Kentucky, through Pinesville, W. Va., close to Washington, D. C., and on to Coatesville, Pa. Here it ties into existing pipe lines from West Virginia. This line, 467 miles in length, passing through rough, mountainous country, is being partly welded and partly coupled. The northern end of the line has been completed so that Washington is being served from the north. In Washington the natural gas is mixed with manufactured gas and is distributed by the Washington Gas Light and Georgetown Gas Light Companies.

Tioga Field

The new natural gas area in and around Tioga County, Pennsylvania, and the southwestern part of New York may have been a surprise to some people, but many geologists, such as J. French Robison and others, have at various times shown that a structure existed there.

The Tioga Field itself has at the present time 20 producing wells, with approximately the same number of dry holes. The total open flow of the wells, which have a rock pressure of from 1,650 to 1,680 pounds, is nearly 500,000,000 feet. The first well in the field, drilled in by the Allegheny Gas Co. on September 11, 1930, blew wild for some time and was finally cemented by the Halliburton process. Production is found in the Oriskany formation at an average depth of 4,400 feet.

Considerable drilling has been going on around this area resulting in the discovery to the north in New York State of two pools, one in Tyrone Township, Schuyler County, and the other in Wayne Township, Steuben County. Both of these fields are producing from the Oriskany, but at a depth of only 2,000 feet and a rock pressure of about 750 pounds. So far 68 producers have been developed with an aggregate open flow of 500,000,000 feet.

Out of the Tioga Field the Pennsylvania Power & Light Co. is constructing a 14-inch line to Williamsport. From the same field the Lycoming Natural Gas Corp. is laying 110 miles of 20-inch to Syracuse. The pipe, which is partly lapwelded and partly seamless, will be Dresser coupled throughout.

The Wayne Field is the starting point for a 55-mile 8-inch line being laid by the Iroquois Gas Co. to connect with its system near Danville, N. Y.

Summary

These recently designed and constructed pipe lines bring out several trends both in construction and operation which will be briefly noted here.

1. Higher operating pressures are being used, with one line designed for 900 pounds.

2. In order to increase the capacity of the lines to the maximum, which is necessary when gas is carried long distances, by these increased pressures, pipe is being made with maximum tensile

DOMESTIC EXPORTS OF PETROLEUM AND REFINED PRODUCTS

	Month of August		Eight mo. ending Aug.	
	1930	1931	1930	1931
Petroleum—				
Crude ..... Bbls.	2,407,479	2,866,555	16,472,718	17,339,461
Crude ..... $	3,477,561	1,950,606	22,734,979	14,317,710
Total refined—				
Petroleum ..... Bbls.	11,512,200	8,093,921	87,167,261	63,300,063
Petroleum ..... $	42,276,657	19,431,370	321,568,959	166,225,312
Gasoline, naphtha and other light products ..... Bbls.	6,433,969	4,036,199	45,375,520	31,123,962
	$ 25,591,195	8,758,292	186,238,884	80,706,913
Oils, illuminating ..... Bbls.	1,686,641	1,131,153	11,651,617	8,864,233
Oils, illuminating ..... $	6,051,225	2,893,473	45,524,983	24,161,482
Gas and fuel ..... Bbls.	2,568,316	2,066,767	23,058,894	18,357,646
Gas and fuel ..... $	3,091,400	1,785,272	23,811,610	17,043,363
Lubricating ..... Bbls.	810,788	848,951	6,967,660	5,382,606
Lubricating ..... $	7,373,661	5,887,177	64,444,098	43,437,164
Other refined petroleum ..... Bbls.	12,486	9,851	110,570	71,616
Other refined petroleum ..... $	169,176	107,156	1,549,354	882,390
Paraffin wax ..... Lbs.	23,694,858	20,908,945	180,012,111	173,563,455
Paraffin wax ..... $	831,720	632,323	6,805,252	5,297,762

strengths of from 70,000 to 80,000 pounds.

3. Manufacturers of electric and gas welding rods have met this increase in the strength of the pipe by a like increase in the strength of the welds produced.

4. Although most of the new lines are operating at high pressures, there seems to be a tendency towards standardization of compression ratios of between 1.5 and 2.0.

5. So far there has not been any standardization in the type of joint, some engineers using the solid coupled, others the combination of coupled and welded and still others using nothing but solid welded lines.

6. Main line, or block, gates are set anywhere from 5 to 10 miles apart. Both plug and gate valves are used.

7. A careful scrutiny of the map of the United States will show clearly that practically all of the recent pipe lines pass directly through or adjacent to the largest coal areas in the country. How simple it would be, when natural gas is gone, if it ever does go, to make coal gas right at the mouth of the mines and transport it to the markets in these existing pipe lines.

CHICAGO LINE A BIG ENGINEERING FEAT

(Continued from Page 16)

lines, but one 24-inch main line has been laid at this time. The time of building of the second 24-inch line will depend upon the rate at which the load can be connected and markets expanded. The single line as designed has a capacity approaching 200,000,000 feet daily while the double line will be capable of delivering approximately 400,000,000 feet daily depending upon the pressures carried.

Gas Reserves

The sponsors of this project own approximately 300,000 acres of well-blocked gas leases located in the sweet gas area of the Texas Panhandle. Gas reserves owned and controlled are conservatively estimated to meet the requirements of a double 24-inch line for a long period of years.

Markets

The markets contracted or available to this project are only excelled by that offered by greater New York City. Chicago and the contiguous territory to the north and east have exceptional potentialities for domestic and industrial sales of natural gas and the same may be said of the territory traversed by the line across southern Iowa and northern Illinois outside the Chicago district.

For the purpose of serving the area referred to as that north of Chicago there is now under construction a combination of 20 and 18-inch extension into the Milwaukee area. This branch line, shown dotted on the accompanying map, will take off the main line at No. 10 station located near Geneseo, Ill. In addition to Milwaukee, this extension will make gas available for the cities of Rock Falls, Dixon, Oregon, Rockford, Sycamore and Belvidere in north central Illinois.

OKLAHOMA CITY WELL ON FIRE

Flames rolling more than 100 feet in the air from the burning well, the Empire Oil & Refining Co.'s No. 2 Gustin, NW cor. SW NE, Section 1-11-3w, about 2 miles east of the business district, on the extreme northeast edge of the Oklahoma City Field, kept back all the fire fighters except those wearing asbestos suits. The well exploded about 2 p. m., Monday afternoon, instantly killing C. R. Biddle, farm boss for the company. It is believed the explosion and fire was caused by atmospheric conditions holding the gas close to earth where it was ignited by a small wood fire about 100 feet north of the well. The fire started shortly after the lease men were opening the master gate to permit the well to flow. The well was making approximately 2,000 bbls. of oil and 15,000,000 feet of gas a day before the military shut down. Because of the low pressure the fire fighters believe the flames can be extinguished with chemicals. There is little danger to other property in the field since the nearest producing well is located about 500 feet away, however, all wells in that part of the field are shut down.

NORTH AND WEST TEXAS

(Continued from Page 26)

many weeks heretofore. Six first reports were listed for new tests, five of them announced for Gray County and one for Carson County. There were two completions recorded this week in Carson County and one in Gray County.

COMPLETIONS IN PANHANDLE DISTRICT

Carson County

Nabob Ray Co.'s No. 1 Chapman (formerly El Paso-Amarillo Oil & Gas Co.), top pay 2,375 feet, initial production estimated 50,000,000 feet of gas, total depth 2,635 feet. Texhoma Natural Gas Co.'s No. 1 McEwen, top pay 2,486 feet, initial production 45,000,000 feet of gas, total depth 2,630 feet.

Gray County

Humble Oil & Refining Co.'s No. 1 Hughey, top pay 2,555-2,721 feet, initial production 29,000,000 feet of gas, total depth 2,749 feet.

COMPLETIONS IN WEST TEXAS

Jones County

Tex-Mex Oil Co. and Eastland Oil Co.'s No. 1 Brewer, top pay 2,553 feet, initial production 40 bbls., total depth 2,564 feet.

Howard County

Cardinal Oil Co.'s No. 1 Settles, deepened from 2,248 feet to 2,350 feet, initial production 1,346 bbls., total depth 2,350 feet. Gulf Production Co.'s No. 18 O'Brien, top pay 2,610 feet, initial production 700 bbls. in 19 hours, total depth 2,993 feet.

SHIPMENTS THROUGH TRUNK LINES

Company, size, location—	Bbls.
Atlantic, 10-inch, Houston	4,544
Gulf, 10-inch, Ranger	23,911
Humble, 2-8-inch, San Angelo	25,025
Humble, 10-12-inch, Comyn	44,924
Illinois, 2-8-inch, Del Rio	22,844
Magnolia, 8-inch, De Leon	15,979
Pasotex, 8-inch, El Paso	7,329
Shell, 10-inch, Cushing, Okla.	38,679
Shell, 10-inch, Houston	28,713
Texas, 12-inch, Houston	26,675
Total	228,633

SHIPMENTS TO REFINERIES

	Bbls.
Burford Ref. Co., Pecos	1,536
Condon Ref. Co., Big Spring	9,082
Coltex Ref. Co., Colorado	8,327
Greatwest Ref. Co., Big Spring	2,472
Continental Ref. Co., Pyote	1,872
Wickett Ref. Co., Wickett	850
Signal Ref. Co., Texon	600
Total	24,740

SHIPMENTS BY TANK CAR

	Bbls.
Fox & Thorsen from Mertzon	50
Total	50
Total daily average production, West Texas	197,555
Total daily average distribution	263,423
Total daily average from storage	25,490

EXPLAINS USE OF SAFETY CODES IN REFINERIES

(Continued from Page 18)

18 or 20, we have not attempted to use them alone in this work. Although they may know more about the technicalities of fire and accident prevention, they cannot constantly be present in all departments for carrying on safety work and instruction. We feel this is a detail of regular manufacturing operation and must therefore be taken care of in the long run by the group supervisor and foreman. We feel it is the safety department's job to see that a foreman is put into possession of all the facts with regard to hazards and prevention methods within his department and in general how to prevent accidents. The safety department is to give all detailed and technical assistance required in the planning of methods of attack in this educational process, to carry on certain investigations of physical equipment and supplying expert knowledge such as passing a tank as being gas free preparatory to carrying lights or doing welding in such tank.

We are strongly against the safety department questioning men at safety meetings or lecturing to them. We feel that the foreman's authority with his men is greatly strengthened when he is able to get up on his own feet and tell his men about what is wanted in the way of accident prevention and then to question them to see that they know the proper procedure in the presence of various accident hazards.

Although our safety codes do not carry any penalties for disobeying instructions, we are now beginning to stress the subject of the necessity of self-discipline as well as the maintenance of discipline by superiors. We are now also beginning to insist on foremen and superintendents penalizing their men when they deliberately disregard instructions laid out in safety codes. Where instructions are definitely laid down in a safety code and then disobeyed, we have a very good reason for either reducing the man's rate of pay or laying him off for a number of days. We have felt that penalizing men for having accidents in the past has done some harm to the safety movement where there was no direct prohibition against certain acts. In a good many instances this was more a case where the man had lost time due to the accident, since he had probably been penalized sufficiently by the loss of time and suffering.

Where men deliberately disobey rules as laid down in written safety codes we are giving them additional time off or demoting them to a lower paid job for a short period. This is all done, not with the idea of injuring the man, but having him serve as an example to all our employes that we do not stand for the breaking of these written rules.

Our accidents continue to be largely of the unsafe conduct type. Very few are due to defective physical equipment or to unsafe practices, either unknown or tolerated. We therefore propose to continue the educational method of questionnaires and recitations about instructions given in the safety codes.

TERMS EXPIRE FOR HALF THE A.P.I. DIRECTORATE

(Continued from Page 15)

Edgar J. Marston, Texas Pacific Coal & Oil Co., Fort Worth, Tex.

Foreign Trade Group

Far East, Herbert L. Pratt, Standard Oil Co. of New York, New York, N. Y. Mexico and South America, C. M. Fuller, Richfield Oil Co., Los Angeles, Calif.

"At Large" Group

W. N. Davis, Phillips Petroleum Co., Bartlesville, Okla.; R. C. Holmes, The Texas Company, New York, N. Y.; F. A. Leovy, Gulf Production Co., Tulsa; J. F. Lucey, Lucey Petroleum Co., Dallas, Tex.; E. W. Marland, Ponca City, Okla.; Thomas A. O'Donnell, Los Angeles, Calif.; Wallace E. Pratt, Humble Oil & Refining Co., Houston, Tex.; Frank R. Coates, Henry L. Doherty & Co., New York, N. Y.; E. B. Reeser, Barnsdall Corp., Tulsa; H. F. Sinclair, Sinclair Consolidated Oil Corp., New York, N. Y.; and J. W. VanDyke, Atlantic Refining Co., Philadelphia, Pa.

The four directors elected by the board of directors whose terms expire are: H. B. Earhart, White Star Refining Co., Detroit, Mich.; W. S. Fitzpatrick, Prairie Oil & Gas Co., Independence, Kans.; W. M. Irish, Atlantic Refining Co., Philadelphia, Pa.; and E. T. Moore, Simms Petroleum Co., Dallas, Tex.

T. J. STRICKLER HEADS NATURAL GAS GROUP

(Continued from Page 15)

of the therm rate in marketing of mixed gases as a logical and necessary step. "We have recently witnessed," he said, "the introduction of the therm rate in America. This method of charging for gas has been in use in England for nearly 10 years where after encountering opposition and difficulty it finally became accepted and established. It is believed by those companies which have adopted it here that it will justify its introduction in those localities in America where a product of mixed gases, of substantially higher heating value than is found usually in manufactured gas is distributed, its application being more scientific and accurate. In the selling of industrial gas to charge on a heat unit basis, rather than on a volumetric standard, seems a logical and constructive step."

President Paige outlined for members the salient features of the "five-year plan" for the guidance of the association's activities during the next five years, formulated by a special committee under the chairmanship of D. D. Barnum, and approved by the executive board of the American Gas Association last May.

An interesting address on the economics of selling gas was delivered at today's session by Sir Francis Goodenough, C. B.E., chairman of the British Commercial Gas Association.

Practically all of the leading Boardwalk hotels are headquarters for at least one of the divisional groups of the association, group and department sessions being held daily, in addition to the general sessions. The main technical and research committee of the natural gas department held an interesting session at the Ambassador Hotel yesterday morning and a dinner meeting of the executive, managing, and advisory committees of the natural gas department was held at the same hotel last night.

Decrease in Sales

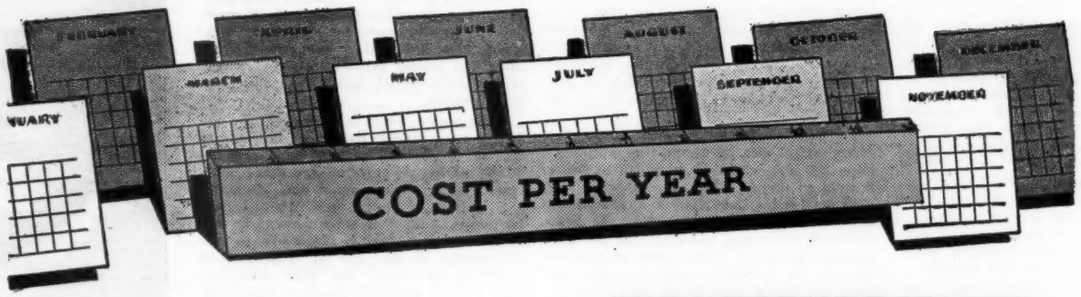
A decrease of 7 per cent in gas sales and 4 per cent in revenues is indicated by the comparative operating reports of manufactured and natural gas utilities for the first eight months of 1931, said Alexander Forward, managing director of the American Gas Association, before the association here today. This compares in other fuels with a decline of 17 per cent in production of bituminous coal and of 8 per cent in output of crude petroleum. Reports from companies representing over 90 per cent of the manufactured gas industry indicate sales for the first eight months of 1931 of 237,000,000,000 feet, a decrease of only 2 per cent over the corresponding period of 1930. Reports from a group of natural gas companies representing more than 85 per cent of the public utility distribution of natural gas indicate sales of nearly 465,000,000,000 feet for the first eight months of 1931, a decline of only 9 per cent from the corresponding period of 1930. The revenues of these companies for the same period aggregated about $193,000,000, compared with $206,000,000 a year ago. Natural gas sales for industrial purposes declined by more than 15 per cent, but this was practically offset by the industry's program of expansion into new territory where gas service was not previously available. The consumption of natural gas for generation of electric power during the first eight months of 1931 continued at the rate of about 8 per cent above the preceding year, despite the fact that during the same period the production of electric power decreased by nearly 5 per cent. The declining trend in water gas production continued during the current year, production of the eight-month period averaging more than 3 per cent under the levels of the previous year. The quantity of coke oven gas produced, however, increased 8 per cent.

IMPROVING GAS PLANT

CHATHAM, Ontario, Oct. 10.—The Canadian Western Natural Gas Co. of Calgary is making extensive improvements to its system in the vicinity of High River, Alberta. Workmen are relaying 6,700 feet of 16-inch line which was laid some 20 years ago and has been seriously affected by corrosion. The new pipe is being given special protective treatment. A control gate has been installed at the High River plant so that in the event of interruption to the line either Turner Valley or Bow Island can be drawn upon.

Cost *per year is your*

REAL *Lubrication Cost*



The real cost of your lubrication does not appear in a comparison based on monthly invoices. It is shown at the end of the year on your cost records for maintenance, power and production.

Lubrication is indirectly a dominating factor in all operating costs, although directly the lowest of many operating expenses.

Many plants in all industries have found by *their own actual plant records* that operating costs per year are the only real measure of lubricant value. They have found that Gargoyle Lubricants and Vacuum organized lubrication methods cut these operating expenses:

1. Maintenance costs
2. Production costs
3. Power costs
4. Lubricant cost per year

The Vacuum representatives have actual cost figures on the operation of machinery similar to your own—*before* and *after* using Gargoyle Lubricants.

GARGOYLE
Lubricating Oils

Repair Cost Cut 53%—on 8 Gas Engines

A southern crude oil producer replaced a cheaper lubricant by adopting Gargoyle Lubricants for his 8 natural-gas engines.

The average repair cost per month was *reduced 53% by Gargoyle Lubricants.* The monthly oil cost was *also reduced 28%—a total annual saving of $2247.60 made by using Gargoyle Lubricants.*

(FROM VACUUM OIL COMPANY, Inc. FILE No. 6278)

Diesel Engine Lubrication, Air Compressor Lubrication, Bearings and Their Lubrication, Stationary Steam Engines, Gear Lubrication.

We will send to any executive or engineer, if requested on your company letterhead, one or all of these authoritative treatises on lubrication.

VACUUM OIL COMPANY, Inc.

ANGLES TO ACCOUNTING AT GASOLINE PLANTS

(Continued from Page 90)

the slips covering these purchases sent in from the field, the home office is able to check the total bill and in turn they make up from the assembled detail a statement which shows the amount chargeable to each plant, job, shop or other account. The accuracy of these details is directly dependent upon the care with which the man who writes the original requisition chooses the account number to which the various items will be charged.

Before any major construction can be undertaken a detailed estimate of the cost must be prepared and the approval of the management secured. For each job so authorized, a separate record is kept in which all charges for material and labor are accumulated to serve as a check on the original estimate and to show the final cost of each completed piece of work. Usually the nature of our business necessitates prompt completion of the work in order that it may start functioning and the prompt submission of completion reports to the home office is just as important in order that expenditures may be known and potential returns estimated.

Idle Equipment

Frequently, during construction or alterations at various points, equipment or materials formerly in service but now idle may be required for the new job. Such equipment may be moved, as required, through the use of a transportation order, which insures delivery to the proper location, at the time desired. From these orders a record is made by a division office clerk of all such transfers of company property. This latter record is of considerable importance as it allows us to determine quickly the location of any given equipment and its completeness and accuracy can only be assured by the refusal of all field employes to transport, deliver or receive anything without the proper transportation orders.

As all motor equipment is now under the jurisdiction of the motor transport department, we are billed at the end of each month for the total service rendered by all types of motor equipment, the home office preparing a statement which shows the amount chargeable to each of the various departments.

The gas which constitutes our raw material is processed to extract the gasoline and the dry or tail gas remaining handled for the lessor or owner in accordance with a prearranged agreement. Some of this gas may be returned to the owner for use as fuel, some may be injected into the oil sands for storage and much is delivered to public utilities for metropolitan consumption.

As the total gas processed comes from many different locations, is of varying degrees of richness, and is owned by many different individuals or companies with whom we may have contracts of varying types, it is patent that we must keep a very close and accurate accounting of all matters in connection with this phase of our operations.

The measurement of both wet and dry gas volumes is handled by recording meters placed wherever necessary for proper segregation. The charts from these meters are gathered each day and the curves converted into volumes by gas department employes, these volumes being later entered in a gas record to show the amount received from or returned to various owners of the gas.

Many tests of the gas treated are made each month by the gas department which, together with the volumes recorded by the meters, determine the proportionate amount of gasoline produced from each lessor's gas on the basis of which royalties are computed.

It will therefore be seen that accuracy of record keeping in this department affects directly the correct expenditure of a considerable amount of money each month and has a very intimate bearing on profit and loss statements.

Production and shipment of gasoline at each plant is watched carefully by the management and for their information daily reports on these two items are phoned each morning to a division office clerk who combines the reports from the individual plants to obtain the totals for the division which in turn are transmitted to the management.

As in any other business the cost of production must be so regulated that a fair margin of profit accrues to the manufacturer. To assist the field executives in profitable operation of their plants cost figures on various phases of this work are furnished each month which, together with other items supplied by the home office, make up a monthly report for the management from which it is possible to follow and regulate the conduct of each plant.

An important part in continuous and economic plant operation is played by the machine shop which, while not directly connected with the production of gasoline, functions as a service unit in the proper upkeep of plant equipment.

In order that proper accounting may be made for each job done by the shop the first requisite is a requisition for machine shop service made out by the supervisor needing work done. Each such requisition is given a shop job number which identifies it until completed. All time spent by various shop employes and all materials required for a specified job are recorded against the job number and the total cost computed from the accumulated charges and debited to the plant or department from which the original requisition came. Both supervisors and shop men assist in obtaining accurate costs by their careful selection of the amounts to which the work is to be charged.

Of equal importance with all of the foregoing phases of accounting and perhaps the one which is made up of more individual items than any other is the payroll. Daily time records approved by supervisors, foremen, etc., must be kept for each individual showing the account number to which their work should be charged. It is obvious that accuracy on such details is only to be obtained, in most cases, by daily attention to the proper distribution of time worked by several hundred individuals which in turn assures not only correct apportionment of cost but full and accurate payment to all employes for the work performed.

All of these time slips are segregated into account groups by the division timekeeper and each group totaled at the end of each month to determine the amount chargeable to various accounts. In addition he prepares a payroll showing the time worked and amount due each employe within the division.

From the foregoing it will be seen that the accuracy of all reports is of prime importance and by the same token the employes who make these reports are daily rendering a service to the management when they supply only complete and correct information which eventually is used by the management in its direction of the business. The statements finally passing into the hands of directors and stockholders are basically just as trustworthy as the field employes make them.

OPPOSES SALE OF THIRD GRADE FUEL

(Continued from Page 95)

and low quality gasoline has consequently been dumped on the market at prices materially below those of well known, branded products.

"The selling price of branded gasoline is the key to the situation. So long as this price is substantially above that of the unbranded gasolines, motorists will be tempted to purchase the cheaper product. If, however, the price of branded gasoline is comparable with that of the unbranded, experience has proved that motorists will buy the better quality product. This plan has the added advantage of removing the incentive for the manufacture of low-grade gasoline and thus works more surely and directly to restore normal marketing conditions.

"Careful thought has been given to the desirability of meeting cut price competition by marketing a third grade gasoline to sell at the same price as the bootleg product. The Shell companies feel, however, that the sale of such a third grade gasoline would represent a definite backward step which they are unwilling to take and would fail entirely to remedy the situation which makes cut price gasoline possible.

"For years Shell, and indeed the industry as a whole, has spent millions of dollars in making steady improvements in the quality of gasoline and other products. This, in turn, made possible material advances in automotive design. Large sums have also been spent by the industry in educating motorists to the advantages of the use of high quality petroleum products. To offer motorists now a third grade of gasoline which admittedly has no other recommendations than its cheapness, is to discard all improvements made in the quality of the product and in automotive design and to throw away the money and effort which those improvements have cost. Finally, the sale of a third grade gasoline, by creating a demand for a cheap product, encourages the manufacture of increasing quantities of gasoline, regardless of its possible undesirable characteristics, and consequently tends to aggravate the very condition it is intended to cure.

"The Shell companies recognize the fact that there is opportunity for material difference of opinion regarding this matter. They are, however, thoroughly convinced that the policy of reducing the price of Shell 400 Extra Dry Gasoline to a price competitive with that of the cut price or third grade gasolines offers the only permanent remedy for the present unsatisfactory condition.

"Shell dealers therefore can rest assured that Shell's policy shall be to supply a product of unexcelled quality at a price that will enable them to meet any competition and consequently to increase their gallonage.

"Motorists can likewise be assured that Shell gasoline can be bought for what they would pay for the third grade product, plus a reasonable differential, and that the quality will be rigidly maintained."

NEW DIRECTOR

Harry Benge Crozier

Director of Public Relations of the American Petroleum Institute, who recently succeeded Leonard M. Fanning.

CALIFORNIA CRUDE OIL PRICES

(Continued from Page 93)

ASSOCIATED OIL CO. PRICES

Associated Oil Co. prices, effective June 26, are as follows:

Ventura Avenue, 22 gravity, 58 cents, with 2 cents added for each degree upward to and including 30 gravity, which is 74 cents.

Kettleman Hills, 30 gravity and above 66 cents.

Potrero, 24 gravity, 69 cents, with 2 cents added for each degree upward to 34 gravity, which is 69 cents.

UNION OIL CO. OF CALIFORNIA

Crude Oil Prices for Its Purchases at the Well for Crude Produced in Strict Accordance With the Production Allocations Made by the California Statewide Curtailment Committee Effective 7 a.m., June 20, 1931

(All gravities above those quoted take highest price for that field)

Gravity °A.P.I.	Signal Hill	Alamitos Heights, Seal Beach	Huntington Beach	Athens, Rosecrans, Dominguez	Torrance	Santa Fe Springs	Playa Del Rey*	El Coyote, Richfield	Montebello	Santa Paula	Orcutt	Coalinga	Lost Hills	McKittrick, Kern River, Sunset-Midway, Elk Hills, Buena Vista Hills	Gravity °A.P.I.
11-13.9	....	....	....	....	$.65	....	....	$.65	$.65	$.65	$.55	....	....	$.50	11-13.9
14-14.9	$.65	$.65	$.65	....	.65	....	....	.65	.65	.65	.55	$.55	$.55	.55	14-14.9
15-15.9	.65	.65	.65	....	.65	....	....	.65	.65	.65	.55	.55	.55	.55	15-15.9
16-16.9	.65	.65	.65	....	.65	....	....	.65	.65	.65	.55	.55	.55	.55	16-16.9
17-17.9	.65	.65	.65	....	.65	....	....	.65	.65	.65	.55	.55	.55	.55	17-17.9
18-18.9	.65	.65	.65	....	.65	....	....	.65	.65	.65	.55	.55	.55	.55	18-18.9
19-19.9	.65	.65	.65	....	.65	....	$.65	.65	.65	.65	.55	.55	.55	.55	19-19.9
20-20.9	.65	.65	.65	....	.65	....	.65	.65	.65	.65	.56	.55	.55	.55	20-20.9
21-21.9	.65	.65	.65	....	.65	....	.66	.66	.65	.65	.57	.55	.57	.55	21-21.9
22-22.9	.65	.65	.65	....	.66	....	.67	.67	.65	.65	.59	.55	.59	.56	22-22.9
23-23.9	.67	.67	.67	....	.67	....	.68	.68	.65	.65	.61	.55	.60	.58	23-23.9
24-24.9	.69	.69	.69	$.69	.68	$.65	.69	.69	.65	.66	.63	.56	.62	.61	24-24.9
25-25.9	.71	.71	.71	.71	.70	.65	.70	.70	.65	.68	.65	.57	.64	.64	25-25.9
26-26.9	.73	.73	.73	.73	....	.65	....	.72	....	.70	.67	....	.66	.66	26-26.9
27-27.9	.75	.75	.75	.75	....	.68	....	.74	....	.72	....	....	.67	.68	27-27.9
28-28.9	.77	....	....	.77	....	.71	....	....	....	.74	....	....	.69	.71	28-28.9
29-29.9	.79	....	....	.79	....	.73	....	....	....	.76	....	....	.71	.74	29-29.9
30-30.9	.81	....	....	.81	....	.75	....	....	....	.78	....	....	.72	.76	30-30.9
31-31.9	....	....	....	.83	....	.78	....	....	....	....	....	....	....	....	31-31.9
32-32.9	....	....	....	.85	....	.80	....	....	....	....	....	....	....	....	32-32.9
33-33.9	....	....	....	.87	....	.82	....	....	....	....	....	....	....	....	33-33.9
34-34.9	....	....	....	.89	....	.85	....	....	....	....	....	....	....	....	34-34.9

*Subject to a gathering charge of 5 cents per barrel.

Oil Industry Needs Umpire, Says Wilbur, Urging Compact Idea

By Charles E. Kern

Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Oct. 10.—"The oil industry needs an umpire," said Dr. Ray Lyman Wilbur, Secretary of the Department of the Interior and chairman of the Federal Oil Conservation Board, when asked by the writer today to express his views on the outlook facing petroleum.

"A good start has been made," the secretary added. "The meeting of the representatives of governors of Texas, Oklahoma and Kansas indicates that the oil states see the road to their future recovery from the result of wasteful methods of producing oil. The next step should be to include other oil states, and then to adopt the proposed plan for interstate compacts, with congressional sanction, leading to a uniform policy that can be enforced to provide a permanent policy for conservation of oil. This would protect the oil producers and aid all branches of the industry while it would protect the public at large.

"If the industry does not proceed to set its house in order it will eventually discover that the consumers of oil products, who are vitally interested in conservation, will eventually proceed to do it for them and the result may not please them as well as if they took the initiative in this movement."

FIELDS OF OKLAHOMA OPENED AFTER SHUTDOWN

(Continued from Page 13)

markets, at what may be fervently hoped will be higher prices, was at least 20,255,000 bbls. and may have been even as much as 28,073,000 bbls.

On August 22 the price of crude oil was again advanced, making the price for 39 gravity oil 68 cents and the top price 70 cents for 40 gravity crude and over.

As day after day passed and the crude production remained shut in some of the producers began to feel the pinch. They had obligations to meet at banks, with supply manufacturers, and others, and they became restive. Bankers, chambers of commerce and other business men not directly engaged in the oil business joined with oil men and royalty owners in pleading with the governor to raise the ban on production. Governor Murray was unyielding for a time, but was finally prevailed upon to allow the fields to open on a restricted production basis for at least a short time.

NO LEGAL OBSTACLES TO IMPORT PRORATION

WASHINGTON, D. C., Oct. 12.—When Secretary of Commerce Lamont recently received the committee representing the governors of Texas, Oklahoma and Kansas, he stated he would have to look into the legality of their proposition to have the large companies prorate their oil imports. It is now understood that there would be no legal objection on the part of the Government to such an arrangement entered into at the request of the governors of states at this time when an acknowledged emergency exists. What the attitude of the Government may be at some other time is another question not now determined.

Secretary Lamont has left for New York. Probably within a few days he will publicly announce his conclusions regarding the request of the governors for the proration of imported oil.

TANK WAGON CHANGES

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son, Miss. On October 2 these prices were reduced to 18½ cents in Atlanta, Ga., and on the following day were further reduced to 18 cents there. On October 3 these prices were reduced in Birmingham, Ala., to 15½ cents.

Atlantic Refining Co. reduced the net gasoline tank wagon and station prices in Philadelphia to 10 cents September 26. On October 3 these gasoline tank wagon and station prices were advanced 1 cent in Pittsburgh, Altoona and Erie and on October 6 in Dover, Wilmington and Scranton.

Standard Oil Co. of New Jersey reduced the gasoline tank wagon and station prices at Charlotte, N. C., to 17 cents October 2 and reduced the kerosene price there to 10.7 cents on October 3.

CRUDE OIL PRICE CHANGES

Effective October 8, the Pennzoil Co. of Oil City, Pa., posted a price of $2 to $2.05 per barrel for Pennsylvania grade oil in National Transit lines, the price depending on the length of pipe line haul to the company's refinery. When the Joseph Seep Purchasing Agency recently withdrew its posted price for oil in the same district and in the same pipe line it was paying $1.95 per barrel for the oil.

RUSSIA'S CRUDE OIL SUPPLY INSUFFICIENT

(Continued from Page 24)

their defects. The installation proved more successful at Touapse than at Grozny, where it is likely to be dismantled.

"The plant at Touapse consists of two pipe stills each with a capacity of 1,000 tons of charging stock per day. Both are arranged on identical lines, and practically nothing distinguishes one from the other. One operates nearly all the time on Maikop crude, the other on a mixture of paraffin base Grozny crude with gasoline and kerosene distillate, yielding on an average of about 60 per cent of benzene and kerosene. The following shows the average analysis of the Maikop crude dealt with in April, and the ultimate yield of products:

Crude oil—	
Specific gravity	0.833
Initial boiling point	28°
Up to 100° C.	10.13%
Up to 160° C.	26.53%
Up to 200° C.	36.71%
Up to 300° C.	58.66%
Residue	40.21%
Loss	1.13%
	100.00%
Yield of products—	
Benzene	36.13%
Kerosene	17.75%
Solar oil	2.24%
Mazout	42.90%
Loss	0.98%

Considerable difficulty is being experienced by the Soviet oil trust in carrying forward its Five Year Plan program due to delays in shipment and installation of foreign equipment. American technical men returning from Russia stress the fact that lack of skill and proper training on the part of workers in the Russian refining industry is also a factor of major importance.

ADDITIONAL ADVANCES IN REFINED MARKET

(Continued from Page 12)

during the past week and it is understood purchases will be made later in the week.

Gasoline and Naphtha

U. S. Motor gasoline advanced to a low of 3⅜ to 3⅝ cents the first of the week. Most of the major refiners were quoting 3½ and 3⅝ cents. There were more inquiries from jobbers and resellers. It is felt by the sellers that many jobbers have reduced their purchases during the recent advance in prices and will have to buy more material over the latter part of the month.

Although not actively traded the higher gravity and low endpoint gasolines are scarce and have advanced more rapidly than U. S. Motor gasoline. In Oklahoma (Group 3) the low on 60-62 400 endpoint gasoline was 3⅝ cents with several selling at 3¾ cents. Sales of 64-66 375 endpoint gasoline as high as 4½ cents were reported with 4¼ cents the low of the market. The 350 and 360 endpoint high gravity grades were firm at a low of 4⅜ cents. The high prices maintained for natural gasolines has aided prices in the higher gravity gasolines.

Natural Gasoline

Little spot business was being placed in natural gasoline the first of the week but prices in Oklahoma were unchanged at 4¼ cents for all grades. Practically all manufacturers were reported to be sold up for the first half of October and will not be interested in new business before the end of the week.

The resumption of normal operation at a number of the largest plants in the State as a result of the reopening of the Oklahoma City and Seminole Fields will give the State around 60 cars daily of additional production by the end of the week. Several buyers are assuming that this increased output will bring lower prices. Manufacturers on the other hand are pointing to the advancing refinery market in their contention that quotations will be maintained around their present levels over the balance of the month.

Kerosene and Furnace Oil

The season has arrived when developments in the kerosene and furnace oil market are closely related. The demand for low cold test and low flash furnace oils has increased and a substantial volume, principally on contracts, is to move over the balance of the month. The regular straw color furnace oils have moved up to a low of 1½ cents and sales of prime white grades as high as 1¾ cents were made during the week. This is within one-eighth cent of the low of market for 41-43 water white kerosene in Oklahoma.

Those in touch with the market feel that the demand will continue to absorb all of the available furnace oil material. Past experience has shown under price conditions as now exist refiners do not finish all of their kerosene cuts but add them to their furnace oil. This in turn tends to strengthen the kerosene market.

Fuels and Gas Oils

Buyers find very little fuel oil of low cold test and a gravity above 24 being offered in Oklahoma for spot shipments.

BANQUET OF THE OIL TRADES ASSOCIATION OF NEW YORK

Over 700 members and guests attended the sixteenth annual banquet of the Oil Trades Association of New York held at the Waldorf-Astoria Hotel, October 5.

The same applies to all grades of gas oil. The cheapest gas oil meeting U.G.I. specifications and the highest cold test was quoted at a low of 2¼ cents. The low cold test grades are being sold at 2⅜ and 2½ cents.

Sales of fuel varying in gravity from 26 to 30 were reported at 45 to 52½ cents. These sales were all for low cold test grades. The lower gravities were quoted over a price range of 25 to 37½ cents.

Lubricants

The lub market in Oklahoma has had a quiet week. Prices are being maintained on the little spot business available from day to day and two or three manufacturers have orders covering their output over the balance of the month. The bright stock market has slowed up considerably when compared with the activity of September and August and the movement of steam refined stocks is confined to regular orders. Neutral oil prices are unchanged. Few inquiries and sales were reported in wax.

Late Fields

(Continued from Page 24)

block of acreage on which the test is to be drilled is being surveyed by geologists.

Hilligoss and others' No. 1 Isern, NW cor. SE NE, Section 12-20-11w, Barton County wildcat, was drilling below 3,200 feet and nearing the pay horizon. The test is about 3½ miles northwest from the Schurr Pool, in Rice County.

In the Welch Pool, in the southeastern part of Rice County, John Rogers and others' No. 2 Rainey, SW cor. NW, Section 3-21-3w, was drilling at 2,000 feet. No. 1 Rainey was completed as the largest well in the Welch Pool, making 2,000 bbls. a day, several months ago.

A field record was established by the Derby Oil Co.'s No. 4 Domsch, NW cor., Section 6-20-1w, in the south end of the Rits-Canton Pool, McPherson County, where the company has made 3,100 feet of rotary hole in 11 days. The test was started September 29 and will be drilled to the Viola lime.

OKLAHOMA

Cities Service Gas Co. resumed transporting natural gas from the Oklahoma City Field, Sunday, and Monday increased the amount to 15,000,000 feet a day. During last winter the company handled an average of 50,000,000 feet of gas a day.

The Obermeyer Oil Corp. of Oklahoma City, announced that it has purchased the property of Howard Tucker and others' No. 1 Golden Lane, in Block 12, Fruitland Addition, located in the NE SE SE, Section 15-11-3w, on the west side of the Oklahoma City Field. A derrick was completed on the location in April, but the test has not spudded.

A petition was presented by the Indian Territory Illuminating Oil Co. to the Oklahoma Corporation Commission asking for a hearing to allow the pipe line companies to estimate their nominations for the last quarter of the year and to fix the allowables for the Oklahoma City Field. Paul A. Walker, chairman of the commission, said he had not conferred with the other members, but because of the crowded docket it would be impossible to reach the petition before the week of October 26. The petition said that while the potential of the Oklahoma City Field had increased there was a seasonal decline in the demand, and a reduction to 5 per cent of the commission's potential was recommended. This would give the Oklahoma City Field an allowable of approximately 175,000 bbls. a day. The present proration order was extended from October 1 to 15.

In Marshall County a wildcat test found a showing of oil and was drilling to the lower formations. Dixon and others' No. 1 McDuffee, SE cor. NE SW, Section 3-7s-6, found oil at 791-828 feet. The oil rose 150 feet in the hole. The test was drilling deeper at 1,000 feet. Taliaferro and others' No. 1 fee, NW cor. SE SE NW, Section 34-5s-5, a wildcat, was landing the casing at a total depth of 578 feet. Neff and others' No. 1 Rice, SE cor., Section 10-5s-5, was drilling at 500 feet.

SOUTHWEST TEXAS

SAN ANTONIO, Tex., Oct. 13.—Buchanan & Lefevre's No. 1 Ray, 3,000 feet southwest of production in the new Pettus Pool, cored 4 feet of saturated oil sand topped at 3,888 feet and set casing without testing. It is over 30 feet higher than in discovery well. T. B. Slick Estate's No. 1 Ray, north offset to discovery well, at 3,976 feet is dry, 50 feet deeper than the discovery well. Acid bottle test on this well, the first to be drilled since the completion of the discovery well, showed the hole to be crooked, hence it may not be down to the proper horizon, and will pull liner and core deeper.

Camp & Stanolind's No. 2 Pettus in Goliad County cored 3,109-18 feet, thought to be top of the Jackson, though not yet identified. If it is Jackson the well looks fairly good.

Stanolind Oil & Gas Co.'s No. 1 Hoffman, a wildcat in Jim Wells County, reached contract depth at 3,500 feet but has orders to drill deeper.

Humble Oil & Refining Co.'s No. 1 White, farthest north test in the Schoolfield-O'Byrne extension in Duval County, flowed 412 bbls. the first 24 hours on 3-inch choke.

Gulf Coast Oil Co.'s No. 1 Elder in Saxet Field, at 4,738 feet, tested salt water. It is 2 miles west of the Neal, Milton & Kepley Production Co.'s No. 1 Roark, which on drill stem test at 4,832 feet tested for a big well and has since set 8¼-inch casing.

Welder Oil Corp.'s No. 3 Welder, 15 miles north of White Point Field, on drill stem test showed 1,100 pounds gas pressure in 12 minutes in sand at 3,651-71 feet. It is the third producer in the new field.

REPORTS OF EARNINGS FOR THIRD QUARTER

(Continued from Page 96)

payable November 2 to stockholders of record October 15.

Twenty Representative Stocks

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange and New York Curb, based on closing quotations for Wednesday, was as follows:

Feb. 4	27.20	June 10	19.62
Feb. 11	27.76	June 17	19.33
Feb. 18	28.53	June 24	22.33
Feb. 25	29.33	July 1	22.33
Mar. 7	27.47	July 8	21.24
Mar. 11	26.53	July 15	19.79
Mar. 18	26.78	July 22	21.33
Mar. 25	26.55	July 29	20.68
Apr. 1	24.80	Aug. 5	20.80
Apr. 8	25.52	Aug. 12	21.00
Apr. 15	24.72	Aug. 19	24.25
Apr. 22	22.73	Aug. 26	23.26
Apr. 29	20.54	Sept. 2	22.80
May 6	20.74	Sept. 9	20.23
May 13	20.33	Sept. 16	18.30
May 20	19.25	Sept. 23	17.64
May 27	18.35	Sept. 30	15.33
June 3	18.00	Oct. 7	15.86

BIG GAIN IN AIRPLANE DEMAND FOR MOTOR FUEL

According to report received by United Air Lines, gasoline used on scheduled flights during September reached a total of 1,721,063 gallons, while oil consumed totaled 54,241 gallons. Both of these figures represent greater consumption than the air lines have ever reported before in any one month, and at the present rate of growth even these figures will be surpassed in a short time. United Air Lines' statement calls attention to the fact that these figures represent only partial use of petroleum products, one big item of consumption being for runways and improvements at airports. United Airport at Los Angeles, Calif., alone has 3,000,000 square feet of paving with petroleum base.

More than 9,353,000 gallons of gasoline and 271,000 gallons of oil were consumed during the first seven months of this year, as compared with 6,257,113 gallons of gasoline and 196,438 gallons of oil last year.

PROGRAM FOR MEETING OF I.P.A. AT TYLER, TEX.

The program for the semiannual convention of the Independent Petroleum Association of Texas at Tyler, Tex., October 19, follows:

10:00 a.m.—President's address, Tom E. Cranfill, Dallas.

"The Recent Washington Conference," Capt. J. F. Lucey, Dallas.

11:00 a.m.—"The Permanent Remedy," Wirt Franklin, Oklahoma City.

12:00 a.m.—Board of directors meeting, Blackstone Hotel (executive session).

2:30 p.m.—Maj. J. R. Parten, vice president, presiding.

"Imports and Control," Bailey W. Hardy, Breckenridge.

"Imports and Conservation," C. V. Terrell, chairman Railroad Commission of Texas.

"Imports and Legal Tendencies," James V. Allred, attorney general of Texas.

"Venezuela, Russia and Texas," Morgan Sanders, member of Congress, Canton, Tex.

5:30 p.m.—Barbecue.

W. C. Stroube of Corsicana, vice president, will introduce Mr. Franklin.

All executives of major companies in Texas and of the Mid-Continent Oil and Gas Association and the Texas Oil and Gas Conservation Association, and the general public have been invited to attend the convention.

ADDITIONAL FOREIGN PRODUCTS

NEW YORK, Oct. 12.—Russian or Rumanian refined products will be handled in the metropolitan New York area by an independent marketer which has completed plans for the erection of 2,640,000 gallons bulk storage at a point near Bayside, just outside of New York City, it is reported here.

The company reported involved has not previously been a handler of oil, and definite details surrounding the proposed project are not available.

The bulk storage plant, according to present plans, will be located on a 20-acre tract on Alley Creek, connected with the East River by Little Neck Bay, and plans call for the landing of gasoline by deep water tankers which will reach the terminal site either through the East River or down through Long Island Sound.

SCOUTS PUBLISH BOOK

The National Oil Scouts Association of America has issued its 1931 year book which contains 327 pages of geological, production and field information gathered by members of the association from the many fields and producing areas in Arkansas, Louisiana, New Mexico and Texas. It is the most comprehensive report yet gathered and published by the scouts, and reflects the large amount of work done by the men and the association. Thirty-three pages are devoted to East Texas alone.

C. A. Strahan, chairman of the executive committee, was supervisor of the collection and publication of the vast amount of data. He is with the Atlantic Oil Producing Co. John H. Langston is president of the organization, and is with the Sun Oil Co., Dallas. Tom H. Terry, with The Texas Company, Seguin, is first vice president; L. S. McGee of the Humble Oil & Refining Co., Houston, is second vice president, and J. W. Selby, of the Shell Petroleum Corp., Dallas, is secretary-treasurer of the association.

SEMINOLE CHAPTER TO MEET

R. F. MacArthur, vice president of Barnsdall Oil Co., and Lee Robison of the Indian Territory Illuminating Oil Co. will be the principal speakers at the regular monthly meeting of the Seminole chapter of American Petroleum Institute October 14 at Seminole, Okla. Mr. MacArthur will speak on the value of the chapter meetings to the men in the field. B. O. Hindman, of the Indian Territory Illuminating Oil Co. is local chairman of the chapter.

EXPECT ADVANCE IN GULF COAST MARKET

HOUSTON, Tex., Oct. 14.—Refinery markets on the Gulf Coast indicated very little change the past week. The strong position of the heavier viscosity pale and red oils continued the bright spot in the picture. Gasolines continued slow in demand with prices marking time. Fuel oils were inactive and weak while gas oils remained steady.

Continued strength in the price of the heavier lubs is contingent upon weather conditions. The unseasonably warm weather which has prevailed over the states in which coastal oils are marketed has been responsible for the present strong demand which sellers are enjoying.

A break in the warm weather, however, probably will result in an immediate shift to the lighter viscosities. Because of this situation buying has extended only from day to day. Very little material is available from coastal refiners and only the fact that few outside sources of supply have been offering material in competitive territory at previously quoted prices has prevented higher prices.

The lighter viscosity oils are slow and weak but are being maintained as a reflection of the tightness of the heavier oils. Very little business is being done in gasolines. Several inquiries for 60 to 90-day cargo shipments have been reported but apparently refiners are not interested in these due to the possibility of a change for the better in the market before that time. Bulk gasoline is being quoted from 4 to 4½ cents. Tank car lots are quoted at a low of 4½ cents.

Fuel oil has given little indication of improvement. Bulk fuel is easily available as low as 40 cents, although being quoted as high as 45 cents. Bunker oil, however, continues steady with little effort to sell below the posted price of 55 cents.

A.S.M.E. WILL MEET

The program committee of the Mid-Continent section of the American Society of Mechanical Engineers has arranged the first of a series of meetings which will be held in the Alvin Hotel, Tulsa, October 16, starting at 9 a.m. and continuing through the day. There will be morning and afternoon meetings and special invitations are being sent to executives, purchasing agents and engineers and others interested in the various problems of the petroleum industry to attend.

The subject chosen for discussion at this meeting will be, "Economic Depression and Its Effect on the Relationship Between Purchasing Agents, Company Engineers and Sales Engineers." Papers will be presented by G. A. Thompson, general purchasing agent for the Empire Companies, Bartlesville, Okla.; H. M. Cosgrove, secretary of the Mid-Continent Purchasing Agents Association, Tulsa; Paul Fenton, purchasing agent for the Tidal Oil Co., Tulsa, representing the purchasing agents; Glenver McConnell, mechanical engineer for the Shell Petroleum Corp., Tulsa; S. S. Learned, representing the company engineers; J. M. McGregor, Taubman Supply Co., Tulsa, and R. T. Roberts, Gould Pump Co., Tulsa, representing the sales engineers.

MAGNOLIA P. L. STATEMENT

Crude oil runs of the Magnolia Petroleum Co. in Oklahoma and Kansas in September were 1,134,918 bbls., a daily average of 37,831 bbls.; shipments 920,128 bbls., a daily average of 30,671 bbls.; stocks at close of September 6,904,382 bbls.

The Magnolia Petroleum Co. ran 1,436,703 bbls. out of the East Texas fields in September, a daily average of 47,890 bbls. Its total runs in Texas in September were 2,611,049 bbls., a daily average of 87,035 bbls. The same company ran 83,680 bbls. from wells in Louisiana and 74,325 bbls. out of Arkansas fields in September, a daily average of 2,789 bbls. in Louisiana and 2,478 bbls. a day in Arkansas.

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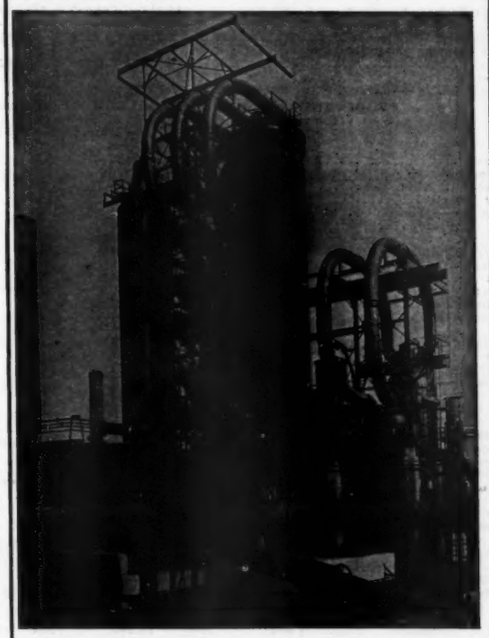

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U. S. BUREAU OF MINES REPORT FOR THE MONTH OF AUGUST, 1931

SUPPLY AND DEMAND OF ALL OILS
(Including wax, coke, and asphalt in thousands of barrels of 42 U. S. gallons.)

	August, 1931	July, 1931	August, 1930	Jan.-Aug., 1931	Jan.-Aug., 1930
NEW SUPPLY:					
Domestic production:					
Crude petroleum	68,418	77,961	74,831	567,793	618,973
Daily average	2,207	2,515	2,414	2,337	2,547
Natural gasoline	3,179	3,521	4,286	29,678	35,486
Benzol	145	153	216	1,381	1,913
Total production	71,742	81,635	79,333	598,852	656,372
Daily average	2,314	2,633	2,559	2,464	2,701
Imports:					
Crude petroleum	2,702	3,588	5,059	31,799	42,066
Refined products	3,224	3,435	4,329	25,943	29,958
Total new supply, all oils	77,668	88,658	88,721	656,594	728,396
Daily average	2,505	2,860	2,862	2,702	2,998
Increase in stocks, all oils	*15,987	*3,415	*6,877	*32,852	*2,666
DEMAND:					
Total demand	93,655	92,073	95,598	689,446	731,062
Daily average	3,021	2,970	3,084	2,837	3,008
Exports:					
Crude petroleum	2,867	2,621	2,407	17,341	16,473
Refined products	8,713	9,135	12,563	68,926	94,738
Domestic demand	82,075	80,317	80,628	603,179	619,851
Daily average	2,648	2,591	2,601	2,482	2,551
Excess of daily average domestic production over domestic demand	†334	42	†42	†18	150
STOCKS (end of month):					
Crude petroleum:					
East of California	340,102	352,216	381,951	340,102	381,951
California‡	136,033	137,719	144,834	136,033	144,834
Total crude	476,135	489,935	526,785	476,135	526,785
Natural gasoline at plants	722	855	744	722	744
Refined products	156,361	158,415	159,302	156,361	159,302
GRAND TOTAL STOCKS, ALL OILS	633,218	649,205	686,831	633,218	686,831
Days' supply	210	219	223	223	228
Bunker oil (included above in domestic demand)	3,442	3,839	4,702	30,496	34,315

*Decrease. †Deficiency. ‡Includes residual fuel oils.

PRODUCTION OF CRUDE PETROLEUM BY STATES
(Thousands of barrels of 42 U. S. gallons)

	August, 1931 Total	August, 1931 Dly. av.	July, 1931 Total	July, 1931 Dly. av.	Jan.-Aug., 1931	Jan.-Aug., 1930*
Arkansas	1,116	36	1,136	37	10,633	13,513
California:						
Kettleman Hills	1,965	63	2,246	73	10,183	3,317
Long Beach	2,354	76	2,416	78	20,797	24,713
Santa Fe Springs	1,931	62	1,964	63	16,663	32,777
Rest of State	9,419	304	9,467	305	79,795	94,603
Total California	15,669	505	16,093	519	127,438	155,410
Colorado	124	4	134	4	1,054	1,125
Illinois	437	14	461	15	3,272	4,115
Indiana:						
Southwestern	64	2	72	2	536	667
Northeastern	3	.....	3	.....	26	37
Total Indiana	67	2	74	2	562	704
Kansas	2,759	89	2,887	93	24,591	28,316
Kentucky	465	15	481	15	4,118	5,095
Louisiana:						
Gulf Coast	678	22	637	21	6,030	5,335
Rest of State	899	29	920	29	8,807	9,656
Total Louisiana	1,577	51	1,557	50	14,837	14,991
Michigan	289	9	347	11	2,127	2,882
Montana	221	7	234	8	1,967	2,301
New Mexico	1,330	43	1,301	42	9,971	5,289
New York	257	9	275	9	2,179	2,589
Ohio:						
Central and Eastern	290	9	313	10	2,846	3,541
Northwestern	82	3	97	3	749	913
Total Ohio	372	12	410	13	3,595	4,454
Oklahoma:						
Oklahoma City	734	24	4,878	157	32,424	23,639
Seminole	2,331	75	4,231	137	34,174	49,636
Rest of State	5,788	187	7,098	229	58,905	79,675
Total Oklahoma	8,853	286	16,207	523	125,503	152,950
Pennsylvania	933	30	927	30	7,336	9,026
Tennessee	....	.....	1	.....	5	14
Texas:						
Gulf Coast	3,706	120	3,874	125	33,941	42,179
East Texas	14,268	460	16,099	519	61,766	.....
West Texas	6,663	215	6,258	202	55,080	76,201
Rest of State	7,712	249	7,606	246	64,586	82,344
Total Texas	32,349	1,044	33,837	1,092	215,373	200,724
West Virginia	347	11	365	12	2,942	3,550
Wyoming:						
Salt Creek	724	23	743	24	6,095	7,097
Rest of State	529	17	491	16	4,195	4,822
Total Wyoming	1,253	40	1,234	40	10,290	11,919
Total United States	68,418	2,207	77,961	2,515	567,793	618,973

*Final figures.

PRODUCTION OF CRUDE PETROLEUM BY FIELDS, WITH CLASSIFICATION BY GRAVITY
(Thousands of barrels of 42 U. S. gallons)

FIELD:	August, 1931 Total	August, 1931 Dly. av.	July, 1931 Total	July, 1931 Dly. av.	Jan.-Aug., 1931	Jan.-Aug., 1930*
Appalachian:						
Pennsylvania grade	1,700	55	1,746	56	13,919	17,072
Other (inc. Kentucky)	592	19	616	20	5,507	6,743
Lima-N. E. Ind.-Mich.	374	12	446	14	2,902	3,832
Ill.-S. W. Ind.	501	16	533	17	3,808	4,782
Mid-Continent:						
N. La. and Ark.	2,015	65	2,056	66	19,440	23,169
W. Tex.-S. E. N. Mex.	7,941	256	7,516	243	64,697	81,085
Other (Okla., Kans., N. Tex., etc.)	33,592	1,084	42,799	1,381	276,446	263,610
Gulf Coast:						
Grade A	1,369	44	1,304	42	12,675	20,607
Grade B	3,015	98	3,207	104	27,296	26,907
Rocky Mountain	1,650	53	1,645	53	13,665	†15,756
California	15,669	505	16,093	519	127,438	155,410
Total	68,418	2,207	77,961	2,515	567,793	618,973
CLASSIFICATION BY GRAVITY (approx.):						
Light crude	62,511	2,016	72,062	2,325	516,134	548,728
Heavy crude	5,907	191	5,899	190	51,659	70,245

*Final figures. †Includes Alaska.

(Continued on next page)

STOCKS OF CRUDE PETROLEUM

(Thousands of barrels of 42 U. S. gallons)

	August 31, 1931	July 31, 1931	August 31, 1930*
EAST OF CALIFORNIA:			
At refineries by location:			
East Coast: Domestic	9,739	10,138	10,969
Foreign	2,981	3,361	3,706
Appalachian	2,176	2,225	2,857
Indiana, Illinois, Kentucky, Michigan, etc.	3,089	3,083	3,199
Oklahoma, Kansas, and Missouri	5,144	5,200	5,283
Texas: Inland	2,001	1,959	2,144
Gulf Coast: Domestic	6,808	7,212	9,455
Foreign	191	290	338
Arkansas and Inland Louisiana	692	585	1,112
Louisiana Gulf Coast: Domestic	3,878	4,486	5,314
Foreign	642	682	719
Rocky Mountain	1,680	1,786	1,689
Total	39,021	41,007	46,785
At refineries by origin:			
Pennsylvania Grade	1,914	2,045	2,679
Other Appalachian (incl. Kentucky)	631	677	877
Lima-N. E. Indiana-Michigan	205	189	148
Illinois-S. W. Indiana	112	114	127
N. Louisiana and Arkansas	2,588	2,423	4,851
West Texas and S. E. New Mexico	3,399	3,996	5,286
Oklahoma, Kansas, N. Texas, etc.	18,712	19,075	18,833
Gulf Coast: Grade A	1,725	1,586	4,323
Grade B	4,241	4,783	3,209
Rocky Mountain	1,680	1,786	1,688
California	.....	.....	1
Foreign	3,814	4,333	4,763
Total	39,021	41,007	46,785
Pipe line and tank farm:			
Pennsylvania Grade	4,904	5,243	5,802
Other Appalachian (incl. Kentucky)	920	944	928
Lima-N. E. Indiana-Michigan	1,416	1,460	1,457
Illinois-S. W. Indiana	9,866	9,920	10,286
N. Louisiana and Arkansas	18,809	18,713	21,423
West Texas and S. E. New Mexico	38,474	38,784	47,610
Oklahoma, Kansas, N. Texas, etc.	182,941	191,591	197,871
Gulf Coast: Grade A	4,430	4,780	7,561
Grade B	9,639	10,069	11,332
Rocky Mountain	23,432	23,505	24,172
Total	294,831	305,009	328,442
Total refinery, pipe line, and tank farm	333,852	346,016	375,227
Producers'	6,250	6,200	6,724
Total crude east of California	340,102	352,216	381,951
CALIFORNIA: Light	38,224	39,621	40,671
Heavy (including fuel)	97,809	98,098	104,163
Total crude (including fuel oil in California)	476,135	489,935	526,785

*Final figures.

IMPORTS AND EXPORTS OF CRUDE PETROLEUM AND MAJOR REFINED PRODUCTS*

(Thousands of barrels of 42 U. S. gallons)

	Aug., 1931 Total	Aug., 1931 Daily av.	July, 1931 Total	July, 1931 Daily av.	Jan.-Aug., 1931	Jan.-Aug., 1930
CRUDE PETROLEUM:						
Imports	2,702	87	3,588	116	31,799	42,066
From Mexico	493	16	827	27	5,486	6,496
From Venezuela	1,708	55	2,195	71	17,451	24,531
From Colombia	438	14	504	16	7,833	9,327
From other countries	63	2	62	2	1,029	1,712
Exports:						
Domestic crude oil	2,867	93	2,621	85	17,341	16,473
To Canada	1,574	57	2,092	68	13,003	12,995
To other countries	1,113	36	529	17	4,338	3,477
Shipments	...	..	...	..	....	1
Foreign crude oil	...	..	...	..	....	....
REFINED PRODUCTS:						
Gasoline:						
Imports	1,244	40	1,528	49	9,805	11,726
Exports†	4,210	136	4,473	144	32,582	47,149
To United Kingdom	896	29	1,109	36	9,802	14,356
To France	1,143	37	592	19	4,609	6,668
To Canada	278	9	317	10	2,041	2,894
To other countries	1,795	58	2,291	74	15,142	22,388
Shipments	98	3	164	5	988	843
Kerosene:						
Exports	1,144	37	1,236	40	8,483	11,771
To China	167	5	229	7	1,221	1,919
To United Kingdom	150	5	377	12	1,890	1,937
To other countries	814	26	608	20	5,252	7,796
Shipments	13	1	22	1	120	119
Gas oil and fuel oil:						
Imports	1,958	63	1,886	61	16,011	17,872
Exports	2,258	73	2,698	87	20,291	25,976
To Chile	60	2	194	6	1,988	2,956
To Panama	244	8	272	9	2,042	2,139
To other countries	1,763	57	2,067	67	14,328	17,964
Shipments	191	6	165	5	1,933	2,917
Lubricants:						
Exports	864	28	535	17	5,485	7,096
To United Kingdom	226	7	120	4	1,172	1,508
To France	147	5	76	2	895	1,098
To other countries	481	16	330	11	3,358	4,433
Shipments	10	..	9	..	60	57
Wax (thousands of pounds):						
Imports	2,275	73	2,537	82	20,526	19,162
Exports	20,914	675	17,284	558	173,584	180,033
To United Kingdom	5,126	165	3,871	125	38,809	49,492
To Italy	1,598	52	709	23	26,914	24,593
To other countries	14,185	458	12,703	410	107,840	105,927
Shipments	5	..	1	..	21	21

*From Bureau of Foreign and Domestic Commerce. †Includes benzol, 76,000 bbls. in August.

RECORD OF WELLS FOR IMPORTANT FLUSH FIELDS, AUGUST, 1931*

	Completions: Oil	Gas	Dry	Total initial production (bbls.)	Aver. initial production (bbls.)	Drilling Aug. 31
Texas	322	7	116	77,500	200	785
East Texas	272	...	13	61,500	200	419
Gulf Coast	15	...	16	10,300	700	47
West Texas	16	...	16	3,800	200	65
California	10	...	24	8,500	900	149
Kettleman Hills	1	...	...	7,200	7,200	9
Long Beach	2	...	1	300	200	13
Playa del Rey	2	...	3	100	50	3
Oklahoma	19	10	10	50,900	2,700	232
Oklahoma County	13	...	...	49,400	3,800	61
Pottawatomie and Seminole Counties	1	...	...	300	300	3
New Mexico	..	3	2	.....	....	47
Lea County (Hobbs)	..	...	...	.....	....	4
Other states	80	115	66	35,400	400	1,004
Total United States	441	135	218	172,300	400	2,217

*From The Oil and Gas Journal and California office of the American Petroleum Institute.

(Continued on next page)

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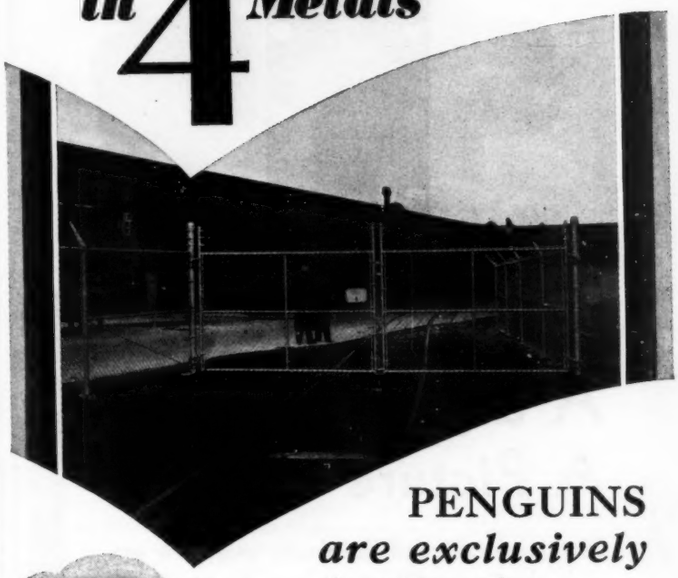

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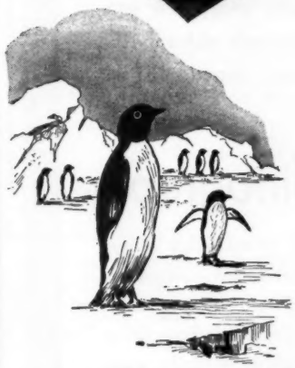

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COMPARATIVE ANALYSES

(Thousands of barrels of 42 U. S. gallons.)

	August, 1931 Total	August, 1931 Daily av.	July, 1931 Total	July, 1931 Daily av.	Jan.-Aug. 1931	Jan.-Aug. 1930
CRUDE PETROLEUM:						
Runs to stills:						
Domestic	77,268	2,492	75,976	2,451	566,920	594,475
Foreign	3,404	110	3,782	122	31,845	41,115
Total	80,672	2,602	79,758	2,573	598,765	635,590
Imports	2,702	87	3,588	116	31,799	42,066
Exports	2,367	93	2,621	85	17,341	16,473
MOTOR FUEL:						
Production	39,283	1,267	38,440	1,240	289,649	298,415
Imports	1,244	40	1,528	49	9,805	11,726
Exports	4,210	136	4,473	144	32,582	47,149
Stocks*	37,190	.....	40,332	.....	37,190	41,424
Domestic demand	39,459	1,273	39,459	1,273	270,423	264,829
KEROSENE:						
Production	3,685	119	3,696	119	27,978	34,321
Imports	2	.....	2	.....	10	127
Exports	1,144	37	1,236	40	8,483	11,771
Stocks	6,734	.....	6,869	.....	6,734	8,030
Domestic demand	2,678	86	2,114	68	19,654	23,742
GAS OIL AND DISTILLATE FUELS:						
Production	7,723	249	7,341	237	60,761	52,934
Stocks	21,028	.....	19,381	.....	21,028	18,332
RESIDUAL FUEL OILS:						
Production	22,569	728	22,147	714	175,017	201,133
Stocks†	23,723	.....	22,035	.....	23,723	21,397
GAS OIL AND FUEL OIL:						
Production	30,292	977	29,488	951	236,778	254,067
Imports	1,958	63	1,886	61	16,011	17,872
Exports	2,258	73	2,698	87	20,291	25,976
Stocks	44,751	.....	41,416	.....	44,751	39,729
LUBRICANTS:						
Production	2,306	74	2,337	75	18,081	24,014
Imports	3	.....	1	.....	22	18
Exports	864	28	535	17	5,485	7,096
Stocks	9,289	.....	9,597	.....	9,289	10,161
Domestic demand	1,753	57	1,969	64	14,300	15,044
WAX (thousands of pounds):						
Production	37,520	1,210	37,800	1,219	297,080	393,680
Imports	2,275	73	2,537	82	20,526	19,162
Exports	20,914	675	17,284	558	173,584	180,032
Stocks	192,198	.....	198,407	.....	192,198	254,990
Domestic demand	25,090	809	25,482	822	184,416	167,411
COKE (short tons):						
Production	177,800	5,735	172,500	5,565	1,356,900	1,268,300
Stocks	1,450,500	.....	1,390,700	.....	1,450,500	1,035,400
ASPHALT (short tons):						
Production	311,500	10,048	314,000	10,129	1,995,300	2,300,200
Stocks	331,900	.....	349,000	.....	331,900	315,800
ROAD OIL:						
Production	980	32	1,115	36	3,824	4,220
Stocks	388	.....	632	.....	388	415
MISCELLANEOUS:						
Production	1,228	40	1,259	41	8,091	4,836
Stocks	719	.....	664	.....	719	478

*Includes motor fuel blends held at natural gasoline plants and in gasoline pipe line systems. †East of California.

SHIPMENTS FROM CALIFORNIA TO ATLANTIC AND GULF COAST PORTS IN THE UNITED STATES*

(Thousands of barrels of 42 U. S. gallons)

	Aug., 1931	July, 1931	Aug., 1930	Jan.-Aug., 1931	Jan.-Aug., 1930
Gasoline	854	921	1,762	9,265	12,951
Natural gasoline	152	216	72	1,173	929
Kerosene	30	28	...	194	180
Gas oil	286	...	157	1,243	2,402
Diesel oil	...	107	...	107	208
Fuel oil	...	...	2	2	25
Lubricants	4	10	4	67	111
Asphalt	1	1	1	12	13
Total	1,327	1,283	1,998	12,063	16,819

*Compiled by E. T. Knudsen of the San Francisco Office of the Bureau of Mines.

NUMBER OF WELLS COMPLETED IN THE UNITED STATES*

	Aug., 1931	July, 1931	Aug., 1930	Jan.-Aug., 1931	Jan.-Aug., 1930
Oil	441	599	988	3,980	8,796
Gas	135	160	297	1,348	1,789
Dry	218	255	681	2,745	4,665
Total	794	1,014	1,966	8,073	15,250

*From The Oil and Gas Journal and California Office of the American Petroleum Institute.

INDICATED DOMESTIC DEMAND FOR CRUDE PETROLEUM EAST OF CALIFORNIA

(Thousands of barrels of 42 U. S. gallons)

Domestic petroleum by fields of origin:	August, 1931 Total	August, 1931 Dly. av.	July, 1931 Total	July, 1931 Dly. av.	Jan.-Aug., 1931	Jan.-Aug., 1930*
Appalachian:						
Pennsylvania grade	2,170	70	2,080	67	15,002	15,753
Other (inc. Kentucky)	662	21	696	22	5,652	6,731
Lima-N. E. Ind.-Mich.	403	13	315	10	2,835	3,032
Ill.-S. W. Ind.	547	18	482	16	4,160	5,028
Mid-Continent:						
N. La. and Ark.	1,750	56	2,802	90	22,511	23,743
W. Tex.-S. E. N. Mex.	8,864	286	7,132	230	73,601	86,472
Other (Okla., Kans., N. Tex., etc.)	42,538	1,372	41,516	1,339	283,908	262,228
Gulf Coast:						
Grade A	1,586	51	2,252	73	16,936	21,830
Grade B	3,998	129	3,811	123	28,391	26,890
Rocky Mountain	1,826	60	2,006	65	15,439	15,935
California	.....	.....	5	.....	5	185
Total demand	64,344	2,076	63,097	2,035	468,440	467,827
Exports	2,262	73	1,962	63	12,039	10,616
Domestic demand	62,082	2,003	61,135	1,972	456,401	457,211
Foreign petroleum	3,221	104	3,853	124	31,838	43,388
Total domestic demand east of California	65,303	2,107	64,988	2,096	488,239	500,599

*Final figures.

GASOLINE PRODUCTION BY THE VARIOUS METHODS, AUGUST, 1931

(Thousands of barrels of 42 U. S. gallons.)

	Straightrun Total	Straightrun Pct.	Cracked Total	Cracked Pct.	Nat. gasoline Total	Nat. gasoline Pct.	Grand total
East Coast	2,753	46	3,126	53	83	1	5,962
Appalachian	899	56	653	41	40	3	1,592
Ind., Ill., Ky., etc.	3,296	50	3,085	47	163	3	6,544
Okla., Kans., Mo.	3,153	55	2,183	38	424	7	5,760
Texas	4,799	51	3,813	41	788	8	9,400
Louisiana and Ark.	1,301	51	1,054	42	186	7	2,541
Rocky Mountain	481	47	446	43	108	10	1,035
California	3,625	65	1,216	22	750	13	5,591
Total	20,307	53	15,576	40	2,542	7	38,425
Texas Gulf Coast	2,765	44	2,976	48	510	8	6,251
La. Gulf Coast	840	49	751	44	116	7	1,707

(Continued on next page)

Fulton Dead Weight Governor

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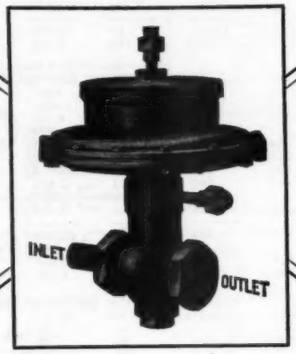

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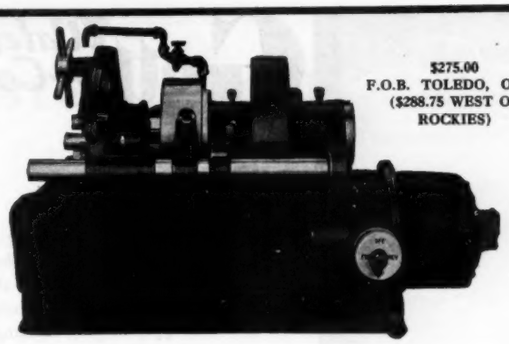

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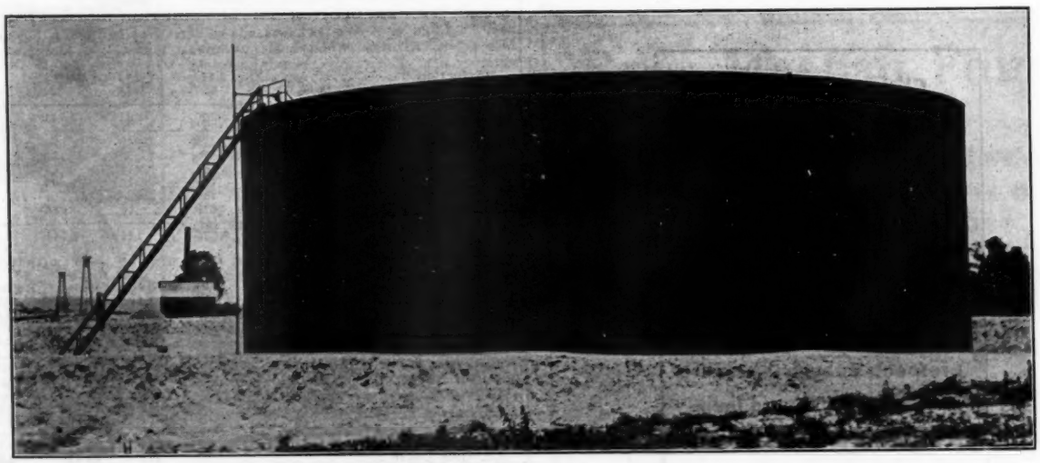

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The Oil and Gas Journal

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RUNS TO STILLS AND OUTPUT OF REFINERIES, AUGUST, 1931

(Thousands of barrels of 42 U. S. Gallons)

INPUT—	Crude oil: Domestic	Crude oil: Foreign	Crude oil: Total	Unfinished oils rerun	Natural gasoline	Total input
East Coast	11,203	3,181	14,384	497	83	14,944
Appalachian	3,357	.....	3,357	176	40	3,573
Ind., Ill., Ky., etc.	10,876	.....	10,876	296	163	11,335
Okla., Kans., Mo.	10,202	.....	10,202	295	424	10,921
Texas	18,845	93	18,938	1,126	788	20,852
Louisiana and Ark.	5,609	130	5,739	359	186	6,284
Rocky Mountain	1,754	.....	1,754	439	108	2,301
California	15,422	.....	15,422	78	*750	16,250
U. S. total	77,268	3,404	80,672	3,266	2,542	86,480
Texas Gulf Coast	12,831	93	12,924	1,019	510	14,453
La. Gulf Coast	3,672	130	3,802	12	116	3,930

OUTPUT—	Gasoline	Kerosene	Gas oil and fuel oils: Gas oil and distillate fuels	Gas oil and fuel oils: Residual fuel oils	Gas oil and fuel oils: Total	Lubricants	Wax (thousands of lbs.)	Coke (tons)	Asphalt (tons)
East Coast	5,962	562	1,276	4,369	5,645	687	13,720	9,600	161,300
Appalachian	1,592	357	260	400	660	400	7,000	2,700	17,300
Ind., Ill., Ky., etc.	6,544	334	843	1,125	1,968	206	3,360	70,200	46,700
Okla., Kans., Mo.	5,760	690	1,033	1,819	2,852	267	1,960	40,000	900
Texas	9,400	927	1,781	6,033	7,814	441	3,360	37,800	18,000
Louisiana and Ark.	2,541	305	523	1,801	2,324	45	5,320	6,100	24,200
Rocky Mountain	1,035	86	99	263	362	17	2,800	11,200	200
California	5,591	424	1,908	6,759	8,667	243	.....	200	42,900
U. S. total	38,425	3,685	7,723	22,569	30,292	2,306	37,520	177,800	311,500
Texas Gulf Coast	6,251	668	1,439	3,880	5,369	433	3,360	25,300	18,000
La. Gulf Coast	1,707	245	363	1,120	1,483	28	5,320	5,700	17,000

OUTPUT (Cont'd)	Other finished products: Road oil	Other finished products: Miscl.	Other finished products: Total	Unfinished products	Shortage
East Coast	22	28	50	218	855
Appalachian	16	34	50	180	200
Ind., Ill., Ky., etc.	343	540	883	680	92
Okla., Kans., Mo.	221	188	409	207	528
Texas	14	72	86	873	1,007
Louisiana and Ark.	27	133	160	485	241
Rocky Mountain	171	53	224	432	77
California	166	180	346	329	412
U. S. total	980	1,228	2,208	3,404	3,406
Texas Gulf Coast	14	45	59	790	643
La. Gulf Coast	9	107	116	123	85

*Includes 67,000 bbls. run through pipe lines.

PRODUCTION OF MOTOR FUEL

(Thousands of barrels of 42 U. S. gallons.)

	August, 1931: Total	August, 1931: Daily av.	July, 1931: Total	July, 1931: Daily av.	Jan.-Aug.: 1931	Jan.-Aug.: 1930
Straightrun gasoline	20,307	655	19,543	630	146,686	155,725
Cracked gasoline	15,576	502	15,639	505	114,947	108,663
Natural gasoline:						
Blended at refineries	2,475	80	2,586	83	22,858	26,806
Blended at plants*	13	1	14	1	109	135
Run through pipe lines†	67	2	105	3	668	1,344
Jobbers, exports, etc.	700	22	400	13	3,000	3,779
Benzol produced‡	145	5	153	5	1,381	1,913
Total motor fuel	39,283	1,267	38,440	1,240	289,649	298,415

*East of California. †To refineries in California. ‡Estimated.

SHIPMENTS OF MOTOR FUEL BY PIPE LINES

(Thousands of barrels of 42 U. S. gallons.)

	Aug., 1931	July, 1931	Jan.-Aug. 1931
Motor fuel turned into lines	1,827	1,410	6,908
Motor fuel delivered from lines	1,686	1,270	5,592
Stocks in lines and working tanks end of month	1,516	1,375	1,516

PRODUCTION AND DISTRIBUTION OF NATURAL GASOLINE

(Thousands of barrels of 42 U. S. gallons.)

	August, 1931: Total	August, 1931: Daily av.	July, 1931: Total	July, 1931: Daily av.	Jan.-Aug., 1931: Total	Jan.-Aug., 1931: Daily av.
Production	3,179	103	3,521	113	29,678	122
Decrease in all stocks	557	18	220	7	79	.....
Total	3,736	121	3,741	120	29,757	122
Blended at refnieries	2,475	80	2,586	83	22,858	94
Blended at plants east of Calif.	13	1	105	3	109	.....
Run through pipe lines in Calif.	67	2	14	1	668	3
Jobbers, exports, etc.	700	22	400	13	3,000	12
Increase in all stocks	.....	.....	.....	.....	.....	.....
Balance	481	16	636	20	3,122	13
Total	3,736	121	3,741	120	29,757	122

	Lubricants	Wax (thousands of lbs.): Crude scale	Wax (thousands of lbs.): Refined	Wax (thousands of lbs.): Total	Coke (tons)
East Coast	3,121	34,247	22,657	56,904	37,500
Appalachian	1,005	23,581	3,330	26,911	11,100
Ind., Ill., Ky., etc.	1,060	20,141	1,375	21,516	200,800
Okla., Kans., Mo.	569	3,362	2,239	4,601	132,600
Texas	2,112	1,343	11,460	12,803	730,900
Louisiana and Arkansas	133	40,420	1,952	42,372	103,600
Rocky Mountain	244	25,901	1,190	27,091	130,400
California	1,045	.....	.....	.....	103,600
Total	9,289	147,995	44,203	192,198	1,450,500
Texas Gulf Coast	2,042	1,343	11,455	12,798	629,500
La. Gulf Coast	112	40,420	1,952	42,372	103,400

	Asphalt (tons)	Other finished products: Road oil	Other finished products: Miscellaneous	Other finished products: Total	Unfinished oils: Natural gasoline	Unfinished oils: Other	Unfinished oils: Total
East Coast	109,300	22	73	95	212	8,916	9,128
Appalachian	20,500	29	64	93	8	1,661	1,669
Ind., Ill., Ky., etc.	86,400	95	202	297	25	5,461	5,486
Oklahoma, Kans., Mo.	4,700	53	25	78	26	3,289	3,315
Texas	8,000	8	10	18	138	14,847	14,985
Louisiana and Ark.	50,600	6	12	18	21	3,112	3,133
Rocky Mountain	2,700	83	43	126	.....	1,748	1,748
California	49,700	92	290	382	1,147	§8,286	9,433
Total	331,900	388	719	1,107	1,577	47,320	48,897
Texas Gulf Coast	7,900	8	3	11	130	13,431	13,561
La. Gulf Coast	27,000	6	8	14	9	2,418	2,427

*Stocks east of California represent inventories held by refining companies at or near refineries; California stocks represent inventories held by refining companies on the Pacific Coast of the United States at refineries, at or in transit to water terminals and bulk distributing stations. †Includes 321,000 bbls. engine distillate. ‡Included with heavy crude. §Includes 2,748,000 bbls. tops.

(Continued on next page)

STOCKS HELD BY REFINING COMPANIES, AUGUST, 1931*
(Thousands of barrels of 42 U. S. gallons.)

			Gas oil and fuel oils		
	Gasoline	Kerosene	Gas oil and distillate fuels	Residual fuel oils	Total
East Coast	4,629	1,295	5,364	5,446	10,810
Appalachian	1,277	420	784	612	1,396
Ind., Ill., Ky., etc.	4,708	593	2,066	2,159	4,225
Okla., Kans., Mo.	2,735	478	3,029	3,433	6,462
Texas	6,270	1,198	3,865	9,023	12,888
Louisiana	844	652	756	2,480	3,236
Rocky Mountain	1,384	327	308	570	878
California	†13,816	1,771	4,856	(‡)	4,856
Total	35,663	6,734	21,028	23,723	44,751
Texas Gulf Coast	4,313	1,011	3,008	5,472	8,480
La. Gulf Coast	664	617	470	1,770	2,240

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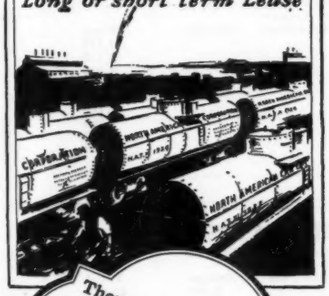

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Explains Action Of Crankcase Oil With Utilization

The reclamation of crankcase oil is not only a matter of utilization of a product which has value as lubricating oil material but it is also a problem of disposal, according to Dr. Winslow H. Herschel of the Bureau of Standards. Speaking at a recent meeting of the Pittsburgh section of Society of Automotive Engineers, Doctor Herschel pointed out that the disposal of large quantities through sewers and by burning was not a satisfactory method of disposal.

"In considering this question of refining crankcase drainings, we must bear in mind how crankcase oil deteriorates in use," said Doctor Herschel. "I was responsible for the statement made a number of years ago, which has been widely quoted and criticized, that oils do not wear out. My original statement was that 'oils do not wear out mechanically'; I did not mean that they do not deteriorate in use, for they do, but they do not wear out in the sense of wear in a rope, in which the length of fiber has been shortened and which cannot again be made as useful as when new.

"In an automobile, the oil has added to it dust from the atmosphere, metal particles due to engine wear, and the heavy unburned portions of the fuel; moreover, the oil oxidizes in use, and if this oxidation goes far enough it forms a sludge, which is a combination of oxidized products, moisture, oil and dirt. We must remember that moisture is often present, because moisture is a product of combustion. If the fuel contains sulphur, this sulphur will combine with the water and form sulphuric acid, which will corrode the crankcase.

"About 10 years ago, attempts were made to develop rectifiers to put on automobiles to keep the oil continuously in good condition without removing it from the crankcase. This has proved successful in steam turbines but has not been very successful in automobiles; at least the idea has not been extensively adopted.

"So the question under discussion is how to treat crankcase drainings to make good oil rather than how to keep the oil in the car in good condition. Much can be done to prevent rapid deterioration of the oil by the use of air cleaners, oil filters, or purifiers on the automobile. Crankcase ventilation retards dilution to a certain extent, but in general we may say that virtually no automobiles now in use have oil rectifiers as part of their standard equipment, hence we have to deal with this used crankcase oil that contains not only dust, metal particles and oxidized oil, but also the unburned fuel.

"Obviously, the dirt must be removed. This can be done by straining; I dislike to use the word 'filtration,' which, unfortunately, is used in more than one sense. Filtration through fuller's earth gives a decolorized product because of the adsorption of the coloring matter upon the earth. The dust and metal particles can be removed by a system of straining by settling, or more rapidly by centrifuging. Then it is generally believed that some alkali should be used to neutralize the petroleum acids that are formed in use. When we go much further than this, we come to differences of opinion."

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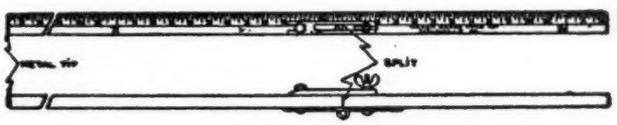

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KANSAS CITY
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Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS

Pipe Line Statement for August

Runs

	Month (bbls.)	Dy. av. (bbls.)
Prairie P. L. Co.*	530,100	17,100
Gulf P. L. Co.	1,184,912	38,223
Texas P. L. Co.	424,977	13,709
Magnolia P. L. Co.	1,376,606	44,407
Empire P. L. Co.	1,303,455	42,047
Cosden P. L. Co.	584,860	18,866
Stanolind P. L. Co.*	1,556,300	50,200
Oklahoma P. L. Co.	1,987,099	64,100
Other lines	4,050,119	130,649
Total August	13,029,328	419,301
Total July	19,563,548	631,081
Difference	6,534,220	211,780

Shipments

Prairie P. L. Co.	3,413,618	110,117
Gulf P. L. Co.	1,621,578	52,309
Texas P. L. Co.	768,064	24,776
Magnolia P. L. Co.	1,312,642	42,343
Empire P. L. Co.	2,041,816	65,865
Cosden P. L. Co.	724,574	23,373
Stanolind P. L. Co.	3,672,415	118,465
Oklahoma P. L. Co.	2,957,638	95,408
Other lines*	6,758,000	218,000
Total August	22,270,345	750,656
Total July	23,149,033	746,743
Difference	121,312	3,913

Stocks

Prairie O. & G. Co.*	36,523,000
Gulf P. L. and Gypsy Oil Co.	3,658,769
The Texas Company	3,430,631
Magnolia Petroleum Co.	6,689,208
Empire P. L. Co.	4,082,258
Mid-Continent Petroleum Corp.	3,494,511
Stanolind Crude Oil Pur. Co.*	16,831,600
Oklahoma P. L. Co.	1,203,189
Carter Oil Co.	7,889,875
Other lines*	16,624,339
Total August	105,427,880
Total July	111,096,680
Difference	5,668,800

*Estimated.

EASTERN PIPE LINE REPORT FOR MONTH OF AUGUST

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky, Illinois, Indiana and Michigan for July and August:

	July, 1931	Aug., 1931
Nat. Transit	133,220.85	121,756.53
S. W. Pa. P. L.	71,451.01	64,160.09
Eureka P. L.	289,307.41	274,238.96
Buckeye P. L. (Macksburg)	343,334.42	325,597.43
Buckeye P. L. (Cleveland)	11,492.40	11,149.05
Buckeye P. L. (Lima, etc.)	86,516.97	70,669.93
Indiana P. L.	2,402.03	2,600.03
Cumberland P. L.	164,965.59	146,239.07
N. Y. Transit	25,516.95	26,517.39
Tidewater P. L.	25,578.82	22,868.07
Pure Oil	184,069.94	217,524.86
Stoll Oil Ref.	46,489.49	58,043.70
Bradford Transit	334,264.05	353,931.05
Total	1,618,910.93	1,596,596.16
Daily average	52,223.70	51,503.10

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for July and August:

	July, 1931	Aug., 1931
Nat. Transit	545,129.48	572,337.36
S. W. Pa. P. L.	444,257.19	470,477.38
Eureka P. L.	389,088.43	402,173.50
Buckeye P. L. (Macksburg)	242,021.51	209,652.58
Buckeye P. L. (Cleveland)	1,950.36	2,191.00
Buckeye P. L. (Lima, etc.)	1,906,783.68	1,985,006.60
Indiana P. L.	975,959.98	1,146,141.55
Cumberland P. L.	116,573.69	97,347.87
Southern P. L.	71,576.50	67,327.53
N. Y. Transit	173,789.42	184,469.53
Northern P. L.	181,895.41	194,193.95
Tidewater P. L.	493,796.82	557,863.79
Pure Oil	189,026.80	233,792.38
Bradford Transit	482,852.88	365,531.21
Tuscarora Dev.	436,907.19	479,254.08
Total	6,560,609.32	6,949,156.80
Daily average	211,632.56	224,166.16

Gross Stocks

The gross stocks held by various pipe lines in the oil producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky at the close of July and August:

	July, 1931	Aug., 1931
Nat. Transit	657,462.03	709,462.84
S. W. Pa. P. L.	436,536.36	437,987.33
Eureka P. L.	1,741,116.21	1,604,025.48
Buckeye P. L. (Macksburg)	325,616.77	304,905.35
Buckeye P. L. (Cleveland)	38,005.67	41,579.11
Buckeye P. L. (Lima, etc.)	3,110,772.07	2,982,405.14
Indiana P. L.	527,931.01	507,328.32
Cumberland P. L.	636,001.14	621,498.00
Southern P. L.	214,438.42	206,524.98
N. Y. Transit	101,414.97	117,899.23
Northern P. L.	215,880.21	247,412.61
Tidewater P. L.	1,009,357.89	862,114.87
Pure Oil	424,712.11	410,582.85
Tuscarora	13,766.39	13,383.56
Bradford Transit	114,837.03	126,446.26
Total	9,569,849.78	9,192,457.33
Decrease	333,499.75	377,392.45

Grades of Oil

The following table shows the amount of the different grades of oil held by the eastern pipe lines at the close of July and August, showing gross stocks of the above fields:

	July, 1931	Aug., 1931
Pennsylvania	3,439,601.00	3,104,338.44
Lima	787,866.84	711,235.85
Kentucky	646,541.50	632,032.36
Mid-Continent	4,264,314.47	4,343,664.94
Illinois	18,123.10	.....
Michigan	413,402.87	401,179.74
Total	9,569,849.78	9,192,457.33

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1928	1929	1930	1931
Jan.	52,904	51,749	75,907	52,939
Feb.	57,002	51,833	79,256	55,163
Mar.	57,485	54,252	76,688	54,331
Apr.	56,812	58,444	84,536	54,914
May	62,067	59,903	76,548	53,344
June	58,230	58,833	78,430	54,110
July	57,144	56,087	65,921	50,723
Aug.	57,745	56,087	54,391	51,503
Sept.	52,487	57,215	56,595	.....
Oct.	58,100	76,093	53,179	.....
Nov.	52,865	74,831	52,333	.....
Dec.	52,025	74,563	53,999	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1928	1929	1930	1931
Jan.	146,465	165,721	217,623	175,369
Feb.	167,368	159,387	224,355	183,494
Mar.	158,883	161,474	228,848	189,508
Apr.	172,935	169,737	241,845	191,450
May	160,559	164,281	248,583	199,247
June	153,024	155,404	234,401	221,155
July	159,470	154,782	207,094	211,633
Aug.	152,853	154,946	205,506	224,166
Sept.	134,133	201,214	193,999	.....
Oct.	176,000	191,367	157,675	.....
Nov.	176,895	202,743	146,638	.....
Dec.	173,572	186,257	142,001	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

	1929	1930	1931
Jan.	7,596,564	12,220,045	11,831,033
Feb.	8,738,835	12,991,561	11,506,489
Mar.	9,002,058	13,247,317	11,012,142
Apr.	8,978,172	13,238,961	11,044,487
May	8,903,560	13,052,953	10,728,239
June	8,921,275	13,396,855	9,903,349
July	9,211,565	13,268,563	9,569,849
Aug.	9,440,643	13,047,051	9,192,457
Sept.	9,443,067	12,812,018	.....
Oct.	9,441,101	12,437,555	.....
Nov.	9,866,538	11,951,380	.....
Dec.	11,253,953	11,751,953	.....

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, September 1	529,506.16
Runs from wells	452,756.49
Other receipts	26,243.47
Regular deliveries	351,280.47
Other deliveries	178,235.54

The amount of Illinois oil run by the Tidewater Pipe Co. in August was 23,568.07 bbls. Deliveries were 41,950.59 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

1931—	Runs	Deliveries
August	476,823.56	393,231.40
1930—		
January	543,357.95	498,393.91
February	548,416.33	414,536.59
March	631,944.49	469,119.51
April	630,074.23	509,304.40
May	605,147.37	504,069.34
June	572,462.57	468,658.21
July	604,529.45	398,454.47
August	594,642.13	375,742.41
September	457,001.11	371,691.63
October	478,442.13	320,688.73
November	423,794.68	355,403.13
December	556,418.75	363,719.55
1931—		
January	468,429.04	369,573.13
February	429,284.54	461,262.55
March	424,658.23	356,563.21
April	421,814.98	382,532.41
May	433,231.80	332,513.91
June	410,805.78	320,256.13
July	520,009.88	389,519.01

Tidewater Pipe Co., Ltd., also delivered in August, 136,517.13 bbls. Oklahoma oil.

AVERAGE DAILY RECEIPTS OF CALIFORNIA CRUDE AND REFINED OIL AT ATLANTIC AND GULF PORTS

Average barrels per day in 1930-31—	Atlantic Ports: Baltimore	Boston	New York	Philadelphia	Others	Total	Gulf Coast Ports: Galveston	New Orleans, Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total all ports
September	6,300	6,400	25,600	13,400	9,567	61,267	.....	.....	.....	.....	2,423	63,690
October	2,516	3,065	27,258	16,419	4,903	54,161	.....	.....	.....	.....	5,355	59,516
November	8,367	6,233	33,800	17,733	4,600	70,733	.....	.....	.....	.....	4,800	75,533
December	5,516	4,323	30,645	9,678	3,580	53,743	.....	.....	.....	.....	4,645	58,387
January	8,387	6,613	31,968	14,678	11,096	62,742	.....	.....	.....	.....	6,129	68,871
February	5,787	3,713	29,143	4,000	5,750	47,393	.....	.....	.....	.....	3,750	51,143
March	10,032	1,611	21,388	7,324	5,774	49,129	.....	.....	.....	.....	6,355	55,484
April	5,133	.....	19,200	16,500	10,067	50,900	.....	.....	.....	.....	4,000	54,900
May	6,452	3,064	19,903	11,226	6,258	44,903	.....	.....	.....	.....	2,355	47,258
June	4,267	.....	25,100	8,333	1,500	39,200	.....	.....	.....	.....	.....	39,200
July	6,774	1,194	24,512	11,065	9,902	53,548	.....	.....	.....	.....	1,335	54,883
August	3,452	.....	16,419	7,419	4,290	31,580	.....	.....	.....	.....	968	32,548

AVERAGE DAILY IMPORTS OF CRUDE AND REFINED OIL AT PRINCIPAL UNITED STATES PORTS

Average barrels per day in 1930-31—	Atlantic Ports: Baltimore	Boston	New York	Philadelphia	Others	Total	Gulf Coast Ports: Galveston	New Orleans, Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total all ports
September	38,867	8,533	150,933	34,500	25,567	258,400	6,433	12,334	.....	3,500	22,467	280,867
October	19,839	11,742	146,194	35,355	26,967	240,097	6,045	7,067	2,774	2,545	18,451	258,548
November	39,633	35,900	134,633	36,467	24,667	261,300	2,467	7,366	.....	1,767	11,600	272,900
December	21,419	14,033	132,774	32,839	23,774	224,839	4,290	10,613	2,097	300	19,290	244,129
January	17,613	13,519	154,225	32,903	30,613	248,871	2,032	11,677	3,097	3,097	19,903	267,774
February	21,321	14,929	137,786	31,714	26,857	234,607	4,536	11,571	.....	536	16,643	251,250
March	37,845	15,935	141,160	26,290	21,129	238,161	4,065	3,580	.....	1,968	9,613	246,774
April	35,000	10,533	105,000	29,767	35,533	215,833	2,733	3,400	.....	.....	6,133	221,966
May	30,129	8,774	107,000	25,452	26,710	198,065	.....	2,000	.....	.....	2,000	200,065
June	30,067	10,833	111,767	27,000	20,833	200,500	3,300	5,500	2,167	1,333	12,300	212,800
July	26,387	11,226	104,678	29,323	21,773	193,387	6,903	7,419	4,194	.....	18,516	211,903
August	32,613	15,581	91,742	22,387	25,741	188,064	4,161	2,516	.....	3,162	9,839	197,903

GROSS PRODUCTION OF CRUDE OIL IN THE UNITED STATES FOR 12 MONTHS

(In Barrels of 42 Gallons)

1930—		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mts.	Eastern	Total
August:	Month	18,770,466	17,162,034	25,069,598	3,491,530	1,700,102	2,151,120	2,193,341	3,417,000	74,955,191
	Daily average	605,499	553,614	808,696	112,630	54,842	69,391	103,011	110,226	2,417,909
September:	Month	17,984,806	16,509,120	23,111,322	3,405,510	1,583,280	2,008,050	2,339,010	3,396,000	71,337,101
	Daily average	599,477	550,304	770,394	113,517	52,776	66,935	107,967	113,200	2,374,570
October:	Month	18,244,053	16,632,523	23,626,552	3,517,913	1,636,553	2,142,885	2,225,550	3,627,000	72,707,029
	Daily average	588,518	536,533	762,147	113,223	52,792	69,125	104,050	117,000	2,345,388
November:	Month	18,109,459	14,941,770	23,025,222	3,459,330	1,557,870	2,136,948	2,257,100	3,333,000	68,419,699
	Daily average	603,648	498,059	734,507	115,311	51,929	71,231	98,570	107,400	2,280,656
December:	Month	17,796,738	15,057,103	21,810,259	3,423,661	1,590,951	2,157,534	2,118,663	3,328,000	66,281,909
	Daily average	573,765	485,713	703,540	110,731	51,321	69,598	100,602	107,355	2,202,645
1931—										
January:	Month	16,495,738	14,850,953	20,019,212	3,432,475	1,574,955	2,135,037	2,066,142	3,274,000	64,838,513
	Daily average	531,795	479,063	645,781	110,725	50,805	68,872	95,683	105,629	2,091,545
February:	Month	14,930,932	13,531,980	18,957,571	3,341,016	1,402,492	1,981,616	2,747,024	3,139,000	60,031,631
	Daily average	532,248	483,285	677,057	119,322	50,089	70,772	98,108	111,750	2,143,629
March:	Month	16,344,842	16,627,667	22,453,619	3,498,595	1,469,245	2,061,576	2,898,035	3,374,000	68,747,683
	Daily average	527,898	536,377	724,310	112,858	47,395	66,502	93,485	108,839	2,217,665
April:	Month	15,802,541	16,815,990	20,337,717	3,281,880	1,413,220	2,005,021	2,901,870	3,373,000	72,334,239
	Daily average	526,785	559,255	896,257	109,396	47,074	66,934	96,729	109,100	2,412,808
May:	Month	16,448,960	17,333,567	18,702,684	3,241,366	1,446,274	2,232,568	3,098,419	3,190,000	75,806,138
	Daily average	530,612	559,157	926,086	107,786	46,654	72,018	99,949	102,900	2,445,166
June:	Month	15,641,436	16,678,200	29,139,833	3,175,440	1,344,450	1,850,511	2,936,200	3,166,000	73,932,070
	Daily average	521,381	555,940	971,327	105,848	44,815	61,684	99,540	105,533	2,466,069
July:	Month	16,093,822	16,467,729	23,827,213	3,090,763	1,347,430	1,715,730	2,995,909	3,241,000	76,729,135
	Daily average	519,139	531,219	1,091,200	99,702	41,530	55,345	93,739	107,774	2,539,658
Total 12 months		202,662,783	193,609,016	295,647,493	40,621,983	18,005,831	24,581,606	36,237,263	39,837,000	850,104,373